## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td>WHS Commitment</td>
<td>8</td>
</tr>
<tr>
<td><strong>Chapter One – Legislative and Regulatory Framework</strong></td>
<td>9</td>
</tr>
<tr>
<td>Work Health and Safety Act 2011</td>
<td>11</td>
</tr>
<tr>
<td>Work Health and Safety Regulation 2011</td>
<td>12</td>
</tr>
<tr>
<td>Approved Codes of Practice</td>
<td>13</td>
</tr>
<tr>
<td>Compliance</td>
<td>14</td>
</tr>
<tr>
<td><strong>Chapter Two – General Safety Information</strong></td>
<td>15</td>
</tr>
<tr>
<td>Campus Emergency Management</td>
<td>16</td>
</tr>
<tr>
<td>Evacuation procedures</td>
<td>16</td>
</tr>
<tr>
<td>BEIMS (Building and Engineering Information Management System)</td>
<td>17</td>
</tr>
<tr>
<td>First Aid</td>
<td>17</td>
</tr>
<tr>
<td>Accident / Incident Reporting</td>
<td>17</td>
</tr>
<tr>
<td>Slips, Trips and Falls</td>
<td>18</td>
</tr>
<tr>
<td>Risk Management</td>
<td>19</td>
</tr>
<tr>
<td>Risk Assessments</td>
<td>19</td>
</tr>
<tr>
<td>Workplace hazard identification and assessment</td>
<td>20</td>
</tr>
<tr>
<td>Hierarchy of Control</td>
<td>21</td>
</tr>
<tr>
<td>Risk register</td>
<td>22</td>
</tr>
<tr>
<td>Hazardous Substances and Dangerous Goods</td>
<td>23</td>
</tr>
<tr>
<td>Safety Data Sheets</td>
<td>23</td>
</tr>
<tr>
<td>Failure to comply with safety instructions</td>
<td>24</td>
</tr>
<tr>
<td>Staff</td>
<td>24</td>
</tr>
<tr>
<td>Students</td>
<td>24</td>
</tr>
<tr>
<td>Off Campus Activities</td>
<td>25</td>
</tr>
<tr>
<td>CIT Teaching Staff</td>
<td>25</td>
</tr>
<tr>
<td>CIT Students (including Apprentices)</td>
<td>25</td>
</tr>
<tr>
<td>Smoke Free CIT</td>
<td>25</td>
</tr>
<tr>
<td>Alcohol and Other Drugs Policy - ACT Government</td>
<td>26</td>
</tr>
<tr>
<td>CIT Code of Practice</td>
<td>27</td>
</tr>
<tr>
<td>CIT Staff</td>
<td>27</td>
</tr>
<tr>
<td>CIT Students</td>
<td>27</td>
</tr>
<tr>
<td>Australian Apprentices</td>
<td>28</td>
</tr>
<tr>
<td>Dress Standards</td>
<td>29</td>
</tr>
<tr>
<td>Harassment and Bullying – Staff and Students</td>
<td>29</td>
</tr>
<tr>
<td>Mobile phones</td>
<td>30</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Car parking</td>
<td>31</td>
</tr>
<tr>
<td>Animals/Wildlife</td>
<td>31</td>
</tr>
<tr>
<td>Personal Safety</td>
<td>32</td>
</tr>
<tr>
<td>Ergonomics</td>
<td>32</td>
</tr>
<tr>
<td>Manual Handling</td>
<td>32</td>
</tr>
<tr>
<td>Lighting</td>
<td>33</td>
</tr>
<tr>
<td><strong>Chapter Three - Operational Staff</strong></td>
<td><strong>35</strong></td>
</tr>
<tr>
<td>Facilities Management Personnel, Contractors and Visitors</td>
<td>36</td>
</tr>
<tr>
<td>Facilities Management Personnel (CIT Estate)</td>
<td>36</td>
</tr>
<tr>
<td>Contractors</td>
<td>36</td>
</tr>
<tr>
<td>Visitors</td>
<td>36</td>
</tr>
<tr>
<td>Office and Administrative Staff</td>
<td>37</td>
</tr>
<tr>
<td>General Office Safety</td>
<td>37</td>
</tr>
<tr>
<td><strong>Chapter Four – CIT Teaching Staff</strong></td>
<td><strong>39</strong></td>
</tr>
<tr>
<td>General Information</td>
<td>40</td>
</tr>
<tr>
<td><strong>Trade Specific</strong></td>
<td><strong>40</strong></td>
</tr>
<tr>
<td>Safe Operating Procedures (SOP)</td>
<td>40</td>
</tr>
<tr>
<td>Job Safety Analysis</td>
<td>41</td>
</tr>
<tr>
<td>Safe Work Method Statement</td>
<td>41</td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>42</td>
</tr>
<tr>
<td><strong>Chapter Five – CIT Students (Non-trade)</strong></td>
<td><strong>43</strong></td>
</tr>
<tr>
<td>Fitness</td>
<td>44</td>
</tr>
<tr>
<td>Forensics</td>
<td>45</td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>45</td>
</tr>
<tr>
<td>Barrier Filters and Goggles</td>
<td>45</td>
</tr>
<tr>
<td><strong>Nursing</strong></td>
<td><strong>46</strong></td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>46</td>
</tr>
<tr>
<td>Universal Precautions</td>
<td>46</td>
</tr>
<tr>
<td>Patient Handling and Interaction</td>
<td>47</td>
</tr>
<tr>
<td><strong>Children’s Services</strong></td>
<td><strong>47</strong></td>
</tr>
<tr>
<td>Aged Care</td>
<td>48</td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>48</td>
</tr>
<tr>
<td>Patient Handling and Interaction</td>
<td>49</td>
</tr>
<tr>
<td><strong>Veterinary Science</strong></td>
<td><strong>49</strong></td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>49</td>
</tr>
<tr>
<td>Handling Animals in Clinic Environments</td>
<td>49</td>
</tr>
<tr>
<td>Handling Animals in Farm Environments</td>
<td>50</td>
</tr>
<tr>
<td>Zoonotic Diseases</td>
<td>50</td>
</tr>
<tr>
<td>Exotic Animals</td>
<td>50</td>
</tr>
<tr>
<td>Driving and Travelling on Unfamiliar Roads</td>
<td>50</td>
</tr>
<tr>
<td>Sharps and Blood Products</td>
<td>50</td>
</tr>
</tbody>
</table>
Beauty Therapy
   Postural Stress 51
   Sharps and Body Fluids 51
   Chemical Safety 51
   Waxing and Burns 52
   Electrical Safety 52

Massage
   Waiting room/administration area 53
   Clinic area/treatment room 54
   Storeroom 54
   Work processes 55
   Hot Stone Massage 55

Building, Engineering, Surveying and Spatial Information
   Building and Engineering 56
   Surveying and Spatial Information 57

Chapter Six – Apprentices (Trades) 59

Workshop Safety 60
Personal Protective Equipment (PPE) 60
Signage 61

Workshop Rules 62

Chapter Seven – Trade Specific WHS Provisions 63

Electrical and Refrigeration 64
   Electrical 64
   Refrigeration and Air-Conditioning 66
      Quality and Training 66
      Access 66
   Working Fluids 67
   Electricity 67
   Other Issues 67

Plumbing and Gas Fitting 68
   Plumbing, Gas Fitting, Draining and Roof Plumbing 68
   General Issues 68
      Manual handling 68
      Excavation 68
      Hot works 68
   Contaminated Substances 69
   Confined and/or constrained spaces 69
   Chemicals 69
   Working at heights 70
   Working on pressurised systems 70
   Slips, Trips and Falls 71
   Power Tools 71
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive, Mechanical and Electrical</td>
<td>71</td>
</tr>
<tr>
<td>Working around vehicles – Workshops</td>
<td>71</td>
</tr>
<tr>
<td>Working around vehicles – Other workplaces</td>
<td>72</td>
</tr>
<tr>
<td>Automotive Electrical</td>
<td>73</td>
</tr>
<tr>
<td>Panel Beating and Spray Painting</td>
<td>74</td>
</tr>
<tr>
<td>Hazardous Chemicals</td>
<td>74</td>
</tr>
<tr>
<td>Dust</td>
<td>75</td>
</tr>
<tr>
<td>Machinery and Equipment</td>
<td>75</td>
</tr>
<tr>
<td>Spray Booths</td>
<td>76</td>
</tr>
<tr>
<td>Vehicle hoists, trolley jacks and frame straighteners</td>
<td>76</td>
</tr>
<tr>
<td>Fire and explosions</td>
<td>76</td>
</tr>
<tr>
<td>Electrical Safety</td>
<td>76</td>
</tr>
<tr>
<td>Confined spaces</td>
<td>77</td>
</tr>
<tr>
<td>Heat Stress</td>
<td>77</td>
</tr>
<tr>
<td>Metal Fabrication</td>
<td>77</td>
</tr>
<tr>
<td>Manual and Material Handling</td>
<td>77</td>
</tr>
<tr>
<td>Unloading material</td>
<td>78</td>
</tr>
<tr>
<td>Moving material</td>
<td>78</td>
</tr>
<tr>
<td>Workstations</td>
<td>78</td>
</tr>
<tr>
<td>Handling and loading material</td>
<td>78</td>
</tr>
<tr>
<td>Hand tools</td>
<td>78</td>
</tr>
<tr>
<td>Welding</td>
<td>79</td>
</tr>
<tr>
<td>Plant and Equipment</td>
<td>80</td>
</tr>
<tr>
<td>Culinary</td>
<td>81</td>
</tr>
<tr>
<td>Baking and Patisserie</td>
<td>81</td>
</tr>
<tr>
<td>Butchery</td>
<td>81</td>
</tr>
<tr>
<td>Commercial Cookery</td>
<td>82</td>
</tr>
<tr>
<td>Common Issues Relating to the Culinary Workplace</td>
<td>82</td>
</tr>
<tr>
<td>Storage and management of knives</td>
<td>82</td>
</tr>
<tr>
<td>Burn Injuries</td>
<td>83</td>
</tr>
<tr>
<td>Hot oil</td>
<td>83</td>
</tr>
<tr>
<td>Chemicals</td>
<td>83</td>
</tr>
<tr>
<td>Steam</td>
<td>83</td>
</tr>
<tr>
<td>Open flames</td>
<td>83</td>
</tr>
<tr>
<td>Slip, Trip and Fall Injuries</td>
<td>83</td>
</tr>
<tr>
<td>Cuts and Grazes</td>
<td>84</td>
</tr>
<tr>
<td>Manual Handling Injuries</td>
<td>84</td>
</tr>
<tr>
<td>Electrical Safety</td>
<td>84</td>
</tr>
<tr>
<td>Hairdressing and Barbering</td>
<td>85</td>
</tr>
<tr>
<td>Postural Stress</td>
<td>85</td>
</tr>
<tr>
<td>Sharps and Body Fluids</td>
<td>85</td>
</tr>
<tr>
<td>Common Issues Relating to the Hairdressing Workplace</td>
<td>86</td>
</tr>
<tr>
<td>Static Postures Cause Muscle &amp; Joint Pain</td>
<td>86</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Chemical Safety</td>
<td>87</td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>88</td>
</tr>
<tr>
<td>Salon Safety</td>
<td>88</td>
</tr>
<tr>
<td>Electrical Safety</td>
<td>89</td>
</tr>
<tr>
<td>Client Behaviour</td>
<td>89</td>
</tr>
<tr>
<td>Staying Healthy For Your Customers</td>
<td>89</td>
</tr>
<tr>
<td><strong>Horticulture</strong></td>
<td>90</td>
</tr>
<tr>
<td>Machinery</td>
<td>90</td>
</tr>
<tr>
<td>Equipment</td>
<td>91</td>
</tr>
<tr>
<td>Chemicals</td>
<td>91</td>
</tr>
<tr>
<td><strong>Floristry</strong></td>
<td>91</td>
</tr>
<tr>
<td>Common issues relating to the florist workplace</td>
<td>92</td>
</tr>
<tr>
<td>Scissors, Secateurs and Knives</td>
<td>92</td>
</tr>
<tr>
<td>Cool Rooms</td>
<td>92</td>
</tr>
<tr>
<td>Floor Mats and Footwear</td>
<td>93</td>
</tr>
<tr>
<td>Handling flowers and plant material</td>
<td>93</td>
</tr>
<tr>
<td>Cleaning of Workplace, Storage Areas and Equipment</td>
<td>93</td>
</tr>
<tr>
<td>Using bleach and water solution</td>
<td>93</td>
</tr>
<tr>
<td>Floors</td>
<td>93</td>
</tr>
<tr>
<td>Display</td>
<td>94</td>
</tr>
<tr>
<td>Cool room</td>
<td>94</td>
</tr>
<tr>
<td>Buckets and containers</td>
<td>94</td>
</tr>
<tr>
<td>Product and Equipment Handling</td>
<td>94</td>
</tr>
<tr>
<td><strong>Construction – Trade</strong></td>
<td>95</td>
</tr>
<tr>
<td>Bricklaying</td>
<td>95</td>
</tr>
<tr>
<td>Erecting Work Platform</td>
<td>95</td>
</tr>
<tr>
<td>Moving Bricks and Blocks to Work Face</td>
<td>96</td>
</tr>
<tr>
<td>Mixing Mortar and Moving to Work Face</td>
<td>96</td>
</tr>
<tr>
<td>Cutting bricks and blocks</td>
<td>97</td>
</tr>
<tr>
<td>Laying bricks and blocks</td>
<td>98</td>
</tr>
<tr>
<td>Cabinet Making</td>
<td>98</td>
</tr>
<tr>
<td>Carpentry</td>
<td>101</td>
</tr>
<tr>
<td>Working at heights</td>
<td>101</td>
</tr>
<tr>
<td>Eye Injuries</td>
<td>102</td>
</tr>
<tr>
<td>Dust, Moulds and Asbestos</td>
<td>102</td>
</tr>
<tr>
<td>Asbestos</td>
<td>102</td>
</tr>
<tr>
<td>Dermatitis</td>
<td>102</td>
</tr>
<tr>
<td>Cuts, abrasions, etc.</td>
<td>103</td>
</tr>
<tr>
<td>Slips, Trips and Falls</td>
<td>103</td>
</tr>
<tr>
<td>Manual Handling</td>
<td>103</td>
</tr>
<tr>
<td>Flammable or combustible components</td>
<td>104</td>
</tr>
<tr>
<td>Noise induced hearing</td>
<td>104</td>
</tr>
<tr>
<td>Struck by falling objects</td>
<td>104</td>
</tr>
</tbody>
</table>
Glass and Glazing 105
  Plastering 105
  Working at heights 106
  Eye Injuries 106
  Dust, Moulds and Asbestos 106
    Asbestos 107
  Dermatitis 107
  Cuts, abrasions, etc. 107
  Falling objects 107
  Slips, trips and falls 108
Tiling 108
  Working at heights 108
  Eye Injuries 109
  Dust, Moulds and Asbestos 109
    Asbestos 109
  Dermatitis 109
  Slips, trips and falls 109
  Manual handling and postural stress 109
  Slips, trips and falls 110
  Cuts, abrasions, etc. 110
  Noise induced hearing loss 110
Reference Listing 111
Introduction

CIT is committed to providing students and staff with a healthy and safe environment in which to study and work.

CIT also pride ourselves on delivering high quality education services, including leading practice work, health and safety (WHS) training.

This WHS handbook has been developed as a valuable resource and learning tool for both CIT students and staff. It incorporates all the WHS information that students and staff need to know in order to play their part in applying the most contemporary WHS policies and procedures in their work environment.

This handbook has been developed in consultation with WHS specialists, CIT teachers and industry representatives. I highly recommend it to all CIT students and staff.

Leanne Cover
Chief Executive Officer
Canberra Institute of Technology
WHS Commitment

CIT is committed to taking all reasonably practicable steps to provide a safe and healthy work environment for staff members, contractors, visitors, students, volunteers and third parties.

Effective management of WHS relies on the commitment and cooperation of all levels of management and staff throughout CIT.

CIT is committed to the following key principles:-
- undertaking effective risk management activities within the work environment;
- complying with relevant WHS Legislation, Regulations, Codes of Practice and Australian Standards;
- ensuring plant, equipment and substances are safe and minimise risk to health when used properly;
- providing all staff members with access to wellbeing initiatives;
- maintaining safe systems, premises, plant and environment;
- providing adequate facilities for the welfare of all staff members, students, volunteers contractors, visitors and third parties;
- providing appropriate information, training instructions or supervision that is necessary to protect all persons from risks to their health and safety, enabling them to work in a safe and healthy manner;
- consulting with all staff members and relevant stakeholders in a meaningful and effective manner regarding WHS issues; and
- ongoing measurement, monitoring and continuous improvement of WHS performance.

A full copy of the CIT WHS Policy and supporting arrangements can be found at: https://staff.cit.edu.au/support/human_resources/whs
In Australia, the legal control of safety in the workplace is done via a framework consisting of a Legislative Act, Legal Regulations and Codes of Practice.

In the ACT and NSW these are known as:
- The Work Health and Safety Act 2011
- The Work Health and Safety Regulation 2011
- Approved Codes of Practice.
Work Health and Safety Act 2011

Whilst there are minor variations between NSW and ACT legislation implementation, the focus of the framework is on the identification, elimination (removal) or minimisation of hazards and risks in the workplace.

There are specific duties that apply to all business entities (referred to under the heading of ‘Person Conducting a Business or Undertaking – PCBU, which is CIT) that specify what must be done and what penalties apply if these things are not done.

The main duty of a PCBU that engages people to do work is that they must:

- ‘Identify hazards and risks in the workplace’ and
- ‘Eliminate or if that is not possible, minimise hazards and risks as far as is reasonably practicable from the workplace’.

What this means in relation to the operation of CIT is that it must ‘know, identify, eliminate or minimise’ all of the elements that it can, that are likely to result in injury or illness to its workers and to others in the workplace.

Under the legislation, workers include:

- employees;
- contractors and Sub-contractors;
- employees of Contractors and Sub-contractors;
- visitors;
- volunteers;
- work experience persons.

In addition to workers there is another classification of people who must be protected, they are referred to as ‘others’, which includes:

- members of the public (who may not be visiting CIT but might be passing by CIT)
- students (including apprentices).

This last classification of persons (students and apprentices) are particularly important as they are the largest group which CIT has a duty of care to, who are exposed to the risks of what we do and how we do it.

CIT has a duty to protect workers (see above classifications) health, safety and wellbeing by ensuring that everything that they do is done safely and without risk to health and wellbeing as well as managing all of its facilities, plant and equipment.
Work Health and Safety Regulation 2011

At the level below the Act, sits the WHS Regulations, which provide greater detail about specific issues and how they must be managed.

These regulations prescribe how these issues must be managed and cover a wide range of areas, including:

- Representation and participation
- General risk and workplace management
- Hazardous Work
  - Noise
  - Hazardous Manual Tasks
  - Confined Spaces
  - Falls
  - High Risk Work
  - Demolition work
  - Electrical Safety
  - Diving Work
- Plant and Structures
  - Registration of plant design and items of plant
- Construction Work
- Asbestos

Each of these sections of the Regulations contains specific guidance on the management of the relevant aspect of WHS and prescribes what must be done in order to comply.
Approved Codes of Practice

There are currently 20 Approved Codes of Practice that are relevant to CIT and what CIT does, either as part of its internal activities or as part of its teaching activities. Each of the Codes of Practice can be reached by clicking on the link below and they provide significant additional detail in terms of how to work safely and without risk in the workplace.

- How to Manage Work Health and Safety Risks
- Work Health and Safety Consultation, Cooperation and Coordination
- Managing the Work Environment and Facilities
- Managing Noise and Preventing Hearing Loss at Work
- Hazardous Manual Tasks
- Confined Spaces
- Managing the Risk of Falls at Workplaces
- Prevention of Bullying
- Formwork
- Construction Work
- Demolition Work
- Excavation Work
- First Aid in the Workplace
- Managing Electrical Risks in the Workplace
- Managing Risks of Plant in the Workplace
- Preventing Falls in Housing Construction
- Safe Design of Structures
- Welding Process
- How to Safely Remove Asbestos
- How to Manage and Control Asbestos in the Workplace.
Compliance

Compliance with the WHS Act, WHS Regulation and Codes of Practice is a key focus for CIT to ensure that the health, safety and wellbeing of all of its staff, students and visitors are protected.

This compliance requires the assistance of everyone who comes to and uses any CIT facility in following the stated rules at all times.

Failure to do so can have major consequences, both financial in the event of a WHS prosecution and personally in terms of the illness or injury that might be sustained.
Chapter Two

General Safety Information
Campus Emergency Management

In the case of any Campus emergency, the first contact within the organisation is to CIT Estate, which can be contacted as below:

<table>
<thead>
<tr>
<th>Campus</th>
<th>Phone</th>
<th>Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIT Bruce</td>
<td>(02) 6207 4000</td>
<td>0408 487 545</td>
</tr>
<tr>
<td>CIT Gungahlin</td>
<td>(02) 6205 0154</td>
<td>0403 165 891</td>
</tr>
<tr>
<td>CIT Fyshwick</td>
<td>(02) 6205 3148</td>
<td>0418 494 732</td>
</tr>
<tr>
<td>CIT Reid</td>
<td>(02) 6207 3540</td>
<td>0418 487 546</td>
</tr>
<tr>
<td>CIT Tuggeranong</td>
<td>(02) 6207 3333</td>
<td>0403 228 388</td>
</tr>
<tr>
<td>CIT Woden</td>
<td>(02) 6207 3540</td>
<td>0418 487 546</td>
</tr>
</tbody>
</table>

If you are unable to reach any of the above contacts, ring Wilson Security on 13 60 00.

If ACT Emergency Services are required they can be contacted on 000.


Evacuation procedures

Should an evacuation occur at CIT, alert tones or evacuation tones will sound:

**Alert Tones** (*Beep...Beep*)
- Prepare to evacuate
- Save computer work
- Switch off all appliances
- Secure material as necessary
- Wait for further instructions.

**Evacuation Tones** (*Whoop...Whoop*)
- Proceed to nearest emergency exit (do not use lifts)
- Proceed to emergency assembly point
- Follow emergency wardens’ instructions at all times.
BEIMS (Building and Engineering Information Management System)

The BEIMS online system allows staff to report faults and submit requests for maintenance or engineering work.

If students identify a building fault or an area that requires maintenance, they can raise this with their teacher, who can report it on their behalf.

First Aid

CIT has staff on site that can provide first aid assistance, in the unlikely event a First Aid Officer cannot be located, call an ambulance on 000.

Staff, Students and others have a responsibility to:
- not place themselves or others at risk of injury/harm;
- through induction become familiar with CIT’s first aid arrangements;
- contact a First Aid Officer as soon as an incident occurs that requires first aid attention; and
- report any accidents and incidents that require first aid assistance.

CIT Staff are able to access information regarding First Aid via the following link: https://staff.cit.edu.au/support/human_resources/whs/first_aid_officers_and_rooms

CIT Students are encouraged to contact a staff member regarding all First Aid matters.
A number of First Aid posters and emergency boards are displayed throughout each CIT campus.

Accident/Incident Reporting

The proper reporting of accidents and injuries, including near misses is the responsibility of every member of CIT Staff. Student incidents/accidents should be reported to your teacher who is then responsible for ensuring the incident/accident is reported through the Riskman system.

‘Accidents’ and ‘Incidents’ include:-
- any workplace event that endangers the health or safety of a person (including third parties)
- any workplace event that results in injury or disease, however minor, including dangerous occurrences
Slips, Trips and Falls

Slips, trips and falls are the second most common cause of injury in the workplace and the majority of these occur as people are walking around during the normal course of their work.

Walking on slippery surfaces might seem fairly obvious on a wet day, but the most serious slips and falls can occur when you slip on ice that may have built up on paths and paving overnight during winter, particularly when paths are in deep shadow in the morning.

Many of the paths on CIT Campuses, particularly at Bruce, exceed the recommended slope for disabled access and could be problematic for the mobility impaired, such as those in wheelchairs or on crutches. These paths are all signed to indicate that they exceed the recommended slope and pointing to paths that do meet the requirements. Any path that exceeds the disabled access provisions should be used with additional caution.

Other common trip and fall injuries can occur when people are using steps and stairs, particularly if they are carrying something or are distracted by what is going on around them, such as a conversation with a co-worker or fellow student or as is becoming more and more common using their mobile phone or texting whilst they are walking.
When walking around the workplace keep a look out for hidden trip hazards and in winter keep a look out for slip hazards such as ice or a build-up of leaf litter on a wet path.

When using stairs, either going up or going down, concentrate on what you are doing, rather than the distraction of the conversation or the mobile device and keep a loose grip on the handrail so that you can steady yourself if you do lose your balance.

Where a hazard is identified, staff are encouraged to raise a BEIMS request. Students are encouraged to advise their teacher.

## Risk Management

Before commencing tasks, all foreseeable hazards and actual risks should be identified and appropriate safety measures put in place.

The risk management process, is made up of the following steps:

- Identify workplace hazards that may have the potential to harm people at the workplace. - manual handling task, moving machinery, handling toxic chemicals.
- Assessing the WHS risks, what type of risk will cause a serious injury, illness or death or how it might occur.
- Eliminate the hazard, if not, find solution to control the hazard; such as add machine guards, provide trolley or use personal protective equipment (PPE).
- Implement suitable control measures to ensure WHS risks are eliminated, or else controlled and monitored, in accordance with the hierarchy of risk control and legal requirements.

A hazard is a potential source of damage, harm or adverse health effects. A hazard may be a tree, a hole, a cable, electricity, confined space etc.

Risk is a combination of the cause, the event and the effect (the consequence or impact).

CIT Staff are able to access further information via the following link: [https://staff.cit.edu.au/support/human_resources/whs/risk_management](https://staff.cit.edu.au/support/human_resources/whs/risk_management)

CIT Students are encouraged to contact a CIT staff member should further information be required.

## Risk Assessments

A WHS risk assessment must be carried out:

- before organising CIT events such graduations, ceremonies and plant sale;
- before new plant(machinery) and equipment or regulated plant is acquired;
- before new chemicals and substances are acquired;
before building are acquired or leased for new workspace like refurbishment;
- before relocation of renovation/change to existing workplaces;
- when required by legislation for specific hazards.

CIT has a number of Risk Assessment forms available to be undertaken for specific hazards including:-
- CIT Risk Assessment form is used prior conducting work activities and functions, the assessment should include the controls to eliminate, reduce and minimise the risk.
  - Risk Management Procedure.
  - CIT Risk Assessment form.
  - The Risk Matrix.
- A Safe Operating Procedure (SOP) is a used for day to day work, detailing the hazards, their risks, and the control measures to be used for each task or operation of plant/machinery in the work process.
- A Job Safety Analysis (JSA) is looking at the work task and considering what is the safest way to complete it. It is a way of becoming aware of the hazards involved in doing the job and taking action to prevent an injury.
- A Safe Work Method Statement (SWMS) is a document that is used for a specific one off work or task that is considered high risk construction work activities to be carried out at a workplace, the hazards arising from these activities and the measures to be put in place to control the risks. **One SWMS can be used for work that involves multiple high risk construction work activities, for example a work activity that requires using mobile powered scissor lift / cherry picker and working at heights of more than 2 metres.**

More detail on the above three points are shown in Chapter 4 of this Handbook.

**Workplace hazard identification and assessment**

Supervisors and managers must encourage all staff, students, contractors and visitors, to report any hazards they identify. Supervisors/managers must proactively identify hazards in their workplace.

- If you have building issue, such as trip hazards, housekeeping, or broken equipment, please lodge through BEIMS request.
- formal risk assessment reports
- audit reports (internal or external)

When a hazard is identified, the supervisor/manager must assess the risk and implement a control plan using the WHS risk assessment methodology. Where reasonably practicable, this should be completed in consultation with Health and Safety Representatives (HSR’s) and affected CIT employees.

The supervisor or manager must ensure that documentation of controls are implemented, reviewed and their effectiveness monitored and maintained.
Hierarchy of Control

In managing hazards and risks in the workplace, there are fundamental principles embedded into the WHS Regulations that focus on how and in what order controls should be considered. This is referred to as the Hierarchy of Control.

The WHS Regulations outlines this as:

**Managing risks to health and safety**

A duty holder, in managing risks to health and safety, must:-

a) Eliminate risks to health and safety so far as is reasonably practicable; and

b) If it is not reasonably practicable to eliminate risks to health and safety—minimise those risks so far as is reasonably practicable.

The Hierarchy of Control can be seen in the diagram below in terms of how it should be implemented.
The lower down the hierarchy the less effective is the control.

<table>
<thead>
<tr>
<th>Hierarchy of Control</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination (Elm)</td>
<td>Eliminate the risk by removing the hazard completely (e.g. Work at Height – Do work at ground level)</td>
</tr>
<tr>
<td>Substitution (Sub)</td>
<td>Reduce the risk by substituting a less hazardous alternative (Change from caustic to non-caustic cleaner)</td>
</tr>
<tr>
<td>Isolation (Iso)</td>
<td>Reduce the risk exposure by physically isolating the worker from the work (Barriers, cages, protective covers)</td>
</tr>
<tr>
<td>Redesign (Red)</td>
<td>Reduce the risk exposure by redesigning the work or the workflow or equipment (Change the work process)</td>
</tr>
<tr>
<td>Administration (Adm)</td>
<td>Reduce the risk exposure by Administrative controls (authorised access, specific training/skills for worker)</td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>Protect the worker from hazard by providing PPE (gloves, eye protection, hearing protection etc.)</td>
</tr>
</tbody>
</table>

The supervisor or manager must ensure that documentation of controls are implemented, reviewed and their effectiveness monitored and maintained. This is outlined in WHS Regulations 37 and 38.

If you require further information or assistance on implementing this framework, please contact CITs Safety and Employment Relations Team on **(02) 6207 4094**.

**Risk register**

A Risk Register is a list of all the identified hazards in a particular area, including the risk level and the controls implemented to eliminate or minimise the risk associated with a hazard(s). Each work area has their own risk register, which should be reviewed regularly to update/add any identified risks.
Hazardous Substances and Dangerous Goods

CIT is committed to ensuring that a management system is in place aimed at identifying and controlling risk factors associated with hazardous substances and dangerous goods in order to meet legislative requirements and assist with the provision of a safe working environment for staff, students and visitors.

Under the ACT Dangerous Substances Act 2004, a range of substances are considered to be dangerous substances, including those:
- that can be classified as a hazardous substance under the Safework Australia approved criteria.
- listed as a hazardous substance under the Safework Australia List of Designated Hazardous Substances.
- can be classified as a dangerous good under the Australian Dangerous Goods Code.

The Act requires suppliers of a dangerous substance to ensure that the substance is correctly packaged and labelled before it is supplied to anyone and to ensure that safety information is prepared as required.

Dangerous goods are substances transported or stored in quantities that present an immediate safety hazard to people, property and the environment. The classification of dangerous goods is different to hazardous substance, in that it does not consider the adverse effects from long term exposure. Dangerous goods can also be hazardous substances depending on their use in the workplace.

A hazardous substance is any substance that can have either a short or long-term adverse effect on the health of people, animals or the environment.

Safety Data Sheets

Working with any substance, whether it is classified as a hazardous substance or a dangerous good, requires following some basic rules. These rules are normally outlined in a document referred to as a Safety Data Sheet (SDS) which must be available for reference wherever the substance is used.

Of particular importance are the PPE requirements and the safety response protocols to be followed in the event of an exposure to the substance. These provisions should be reflected in any detailed operational requirements where these are specified.

In CIT many areas use electronic data bases such as CHEMWATCH for online access to SDS information, in other areas the documents are held in hard copy and kept in folders that must be readily available in the workplace.

SDS are prepared by the manufacturer of the product and are only valid for five years from the date of issue.

A check of the currency of the SDS can be made by referring to the issue date and ensuring that it is less than five years old.
Failure to comply with safety instructions

This section applies to formally drafted WHS instructions in relation to workplaces, work practices and use of equipment as well as the wearing of specified uniforms and protective clothing (PPE).

Any breach of these instructions will be treated within the framework outlined below.

Staff

By accepting employment at CIT, you undertake to comply with the CIT Code of Practice as part of your terms and conditions of employment. This includes adhering to all policies, procedures and guidelines.

CIT is a statutory authority of the ACT Government and as such all employees are required to comply with the Public Sector Management Act 1994 (PSM Act). As a CIT employee, you hold a position of trust and are accountable for your actions. Failure to comply with section 9 of the PSM Act may result in either misconduct or under-performance disciplinary actions being taken.

Section H – Workplace Values and Behaviour - of both CIT Enterprise Agreements outlines the process for identifying and dealing with misconduct and underperformance to comply with the PSM Act. You should understand and adhere to all laws, regulations, policies, industrial agreements and frameworks relevant to your work. CIT policies and procedures can be found on SIS. If you need clarification on any policy ask your supervisor or Director.

Students

As per the Student code of conduct and CIT’s unsatisfactory student behaviour policy you are expected to comply with all Work, Health and Safety requirements.

Failure to adhere to these requirements may result in the following disciplinary action being taken:

- exclusion or timeout from CIT
- exclusion from a program or subject
- exclusion from one or more CIT activities
- a requirement to enter into a contract that includes conditions for continued enrolment
- the issuing of a reprimand
- a combination of one or more of these or other actions that is appropriate under the circumstances.

If you are an apprentice these actions will include contact with your employer and place your apprenticeship and/or completion/continuation of your qualification with CIT on hold.
Off Campus Activities

Off-campus activities form an integral part of the learning at CIT. The nature of these activities, (combined with the less familiar environments they are conducted in), may present increased risk.

CIT Teaching Staff

The Off-Campus Activities Policy/Procedures has been developed to provide guidance on appropriate ways to control risks associated with off campus activities.

A Risk Management Plan is one of nine (9) documents to be completed prior to undertaking an off campus activities (all 9 may not be relevant, depending on the activity to be undertaken).

Information regarding off-campus activities can be found via the following link: https://staff.cit.edu.au/support/teaching_learning/resources/off_campus_activities

CIT Students (including Apprentices)

When undertaking off campus activities, such as industry visits or excursions, students must ensure that they follow any specific rules in relation to the site being visited, including induction rules and any PPE requirements.

Smoke Free CIT

CIT is a smoke free environment. CIT recognises that the health, safety and welfare of its staff, students, contractors and visitors are of primary importance, and will ensure that all practicable means are applied to ensure a smoke-free environment. Staff and students are required to remove themselves beyond the boundary of a CIT campus in order to smoke, any tobacco products. These provisions also include the use of e-cigarettes.

CIT Staff and Students can access further information (including campus boundary maps) here: Smoke Free Policy.
Alcohol and Other Drugs Policy
– ACT Government

As part of the ACT Government, CIT is committed to providing safe and healthy working environments for its employees and other people through practices that eliminate or reduce risk in its workplaces arising from the use of alcohol or other drugs.

The following is prohibited:

- drinking alcohol while on duty or on government premises without prior approval of the appropriate delegate (as referenced in a Directorate delegation schedule) on any occasion, including Christmas parties, the Melbourne Cup and farewells;
- carrying alcohol in government vehicles except where prior approval has been given by an appropriate delegate; or
- consuming alcohol in or on a Government vehicle.

CIT staff and students are expected to refrain from:

- bringing prohibited substances into the workplace at any time. Such an act may be considered a criminal offence and dealt with accordingly; and
- smoking on ACT government premises. *The Smoke-Free Public Places Act 2003 prohibits smoking of any substance in an enclosed public space or on Government premises.*

Where a worker is concerned that a person's conduct or behaviour may present a risk to the health and safety of another person in the workplace, these circumstances must be promptly brought to the attention of a manager or supervisor with authority over the person or workplace in question.

If a worker is found to be intoxicated in the workplace this may form the basis of an allegation of misconduct and result in disciplinary action being taken against the employee. In some cases such conduct may be considered ‘serious’ misconduct and result in the termination of the employee’s employment.

Managers are able to seek the advice and assistance of the Human Resources area when dealing with issues relating to employees who are suspected of being intoxicated at work and/or who are suspected of suffering from drug or alcohol dependence.

Further information can be found via:
http://www.cmd.act.gov.au/__data/assets/word_doc/0008/567818/whs_01_2014_alcohol_drugs_v2.doc
CIT Code of Practice

CIT Staff

CIT’s Code of Practice sets out the standards of behaviours and expectations for CIT staff and is consistent with the ACT Public Service Code of Conduct.

Employee values of respect, integrity, collaboration and innovation are enshrined in the ACT Public Service Code of Conduct which is drawn from the Public Sector Management Standards.

By accepting employment at CIT, you agree to comply with the Code of Practice as part of your terms and conditions of employment.

CIT is a statutory authority of the ACT Government and as such all employees are required to comply with the Public Sector Management Act 1994 (PSM Act). As a CIT employee, you hold a position of trust and are accountable for your actions.

Failure to comply with section 9 of the PSM Act may result in either misconduct or underperformance disciplinary actions being taken. CIT Enterprise Agreements outline the process for identifying and dealing with misconduct and underperformance to comply with the PSM Act.

CIT Students

CIT is committed to upholding the CIT values of respect, integrity, collaboration and innovation. The CIT Student Code of Conduct has been developed to provide a clear statement of CIT’s expectations for student behaviour.

The Student Code of Conduct has been developed in collaboration with the CIT Student Association (CITSA), who are able to assist you in furthering your understanding of the Student Code of Conduct if required.

In relation to Work Health and Safety (WHS):-

- you must comply with the WHS policies, procedures and guidelines, and conduct yourself in a safe manner and not place yourself or others at risk.
- you should dress appropriately as in industry, for example appropriate footwear must be worn and Personal Protective Equipment (PPE) used where required and/or directed.
- any medical management plans or medication you are taking which may affect your performance or safety should be disclosed to your teacher.
- students with infectious diseases must advise their teaching college of their condition and remove themselves from CIT until a medical clearance certificate is provided.

Unsatisfactory Behaviour (which is managed by the Unsatisfactory Student Behaviour Policy) will not be tolerated and may impact your enrolment at CIT.
This includes any behaviour which:

- limits CIT’s capacity to provide a study environment which is free from bullying, discrimination and harassment;
- interferes with the potential of other CIT students to learn; and
- interferes with the rights of CIT staff and students to be safe, treated fairly and with respect.

Illegal behaviour, including physical violence, will not be tolerated at CIT and may be referred to the police.

Unsatisfactory student behaviour will be managed in accordance with the principles of procedural fairness and natural justice. Unsatisfactory behaviour may result in exclusion from CIT, classes or other activities and all CIT campuses. If a student is a trainee or apprentice and engages in unsatisfactory student behaviour, their employer will be informed of the outcome of the disciplinary process.

Academic misconduct is any action undertaken by a student that unfairly advances his, her or another student’s progress in a subject and/or program. This includes plagiarism, cheating and copyright violations. Academic misconduct is managed through the Academic Misconduct Policy.

Further information can be found within the CIT Student Code of Conduct Guide: https://cit.edu.au/__data/assets/pdf_file/0005/89186/CIT_Student_Code_of_Conduct.pdf

**Australian Apprentices**

In addition to the above, to ensure all Australian Apprentices maximise the benefits of training at CIT and successfully complete their qualification; there are a number of requirements that CIT Australian Apprentices are expected to follow. These include:-

- Paying fees;
- Attending classes;
- Complying all required work;
- Ensuring safety of themselves and others;
- Behaving;
- Updating CIT of your study status and personal details; and
- Seeking Support (where necessary).

If these requirements are not met, CIT may:

- Arrange one-on-one discussions with you, the Head of Department and/or Director for your program to address the issue/s and:
  - Seek and provide additional support, where required;
  - Determine if disciplinary action is required (eg removal from classes);
- Report details of the issue/s to your employer, where appropriate;
- Notify your State Training Authority (Skills Canberra or Training Services NSW), where appropriate; and/or
- De-register your enrolment from CIT.
Dress Standards

In line with the ACTPS Code of Conduct, it is expected that staff and students wear appropriate clothing in the workplace. Many of the areas within CIT have the requirement for you to wear Personal protective equipment, which may include boots, hearing protection etc.

Students not meeting these requirements will not be able to attend class, and ongoing non-compliance will impact on enrolment continuing at CIT.

As leaders in safety best practice, all staff are required to wear required protective equipment and therefore can face disciplinary action for failure to comply with this requirement.

Harassment and Bullying – Staff and Students

CIT is committed to providing learning and working environments that are free from harassment, bullying and violence of any kind.

All staff, students and visitors are entitled to be treated with dignity and respect and therefore bullying, all types of discrimination and harassment are unacceptable and will not be tolerated at CIT.

Harassment is any form of behaviour that is unwelcome, unsolicited, unreciprocated and usually (but not always) repeated and may be biased. It is behaviour that is likely to offend, humiliate or intimidate.

Bullying behaviour is a form of harassment and is based on a misuse of power in human relationships. From a workplace health and safety perspective, bullying is defined as: repeated, unreasonable behaviour directed toward a person, or group of people, which, creates a risk to health, safety and welfare.

Bullying is not:

- expressing differences of opinion in an appropriate manner;
- giving lawful instructions;
- giving feedback in an appropriate manner; or
- taking reasonable action to equitably manage the learning environment such as:
  - allocation of work to a student, and setting reasonable goals, standards and deadlines;
  - warning students about unsatisfactory behaviour;
  - appropriate management of a student’s unsatisfactory behaviour;
  - appropriate management of the learning environment.

What is “reasonable” will depend on the circumstances of each case but must be assessed objectively.

All staff, students and visitors to CIT must take personal responsibility to create a positive, working and learning environment and to ensure that their conduct does not include behaviours which could
constitute discrimination, harassment, bullying or increase the risk to another person's physical or psychological health or safety.

Staff, students and/or visitors who experience or witness harassment or bullying behaviour should report the incident as soon as possible.

All incidents of bullying and harassment will be dealt with in accordance with the Complaints Students and Community Members Policy for students and the Resolving Staff Workplace Issues Policy and enterprise agreements for staff.

A single incident of unreasonable behaviour may have the potential to escalate into bullying and therefore should not be ignored.

All reports of alleged bullying, harassment or violence will be treated in a fair, timely, sensitive manner and procedural fairness/natural justice will apply to the complainant and respondent for all matters raised.

**Threatening Behaviour** between persons on CIT property will not be tolerated and will result in either formal disciplinary action or the matter being dealt with by the Police.

Threatening behaviour is any altercation between individuals irrespective of whether this results in injury to one party or another and may include:

- Verbal aggression
- Threats of self-harm or suicide
- Threats to kill or harm others
- Physical violence.

Threatening behaviour should always be taken seriously.

All reports of alleged bullying, harassment or threatening behaviour will be treated in a fair, timely, sensitive manner and procedural fairness/natural justice will apply to the complainant and respondent for all matters raised.

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**Mobile phones**

Mobile phones must be on silent or turned off while you are in class (or in the Learning Centre); except under exceptional circumstances and in consultation with teaching staff.

Within the learning environment, mobile phones are used in theory classes, however should not be used while you are operating machinery or conducting practical tasks. The use of mobile phones by other persons whilst students or teachers are using equipment is also to be avoided at all times.
Car parking

Parking for staff and student varies between each campus. Please refer to the following link for campus maps: https://cit.edu.au/about/locations

It is imperative that cars are parked in the designated parking bays only, as to reduce access/egress issues. Parking Inspectors are frequent to CIT campuses and can issue parking infringements to cars not parked in designated parking bays.

Please adhere to speed limits to ensure safety on CIT’s campuses.

Animals/Wildlife

CIT recognises that animals can and do present a risk to the health and safety of individuals who attend CIT campuses, and to other animals that are kept for teaching purposes. Some animals have the potential to inflict harm (i.e. attack) and the vast majority pose a potential threat in terms of their capacity to contribute to accidents, spread disease and or cause allergic reactions. In light of these concerns, no animal is to be brought or kept on CIT premises at any time, (unless that animal is covered by a current exemption).

CIT has granted a standing exemption to:

- Accredited assistance animals when accompanying a person with a visual, hearing or other disability (i.e., assistance dogs);
- Police dogs, when being used by and under the control of ACT Policing;
- Search and rescue dogs, when being used by and under the control of official rescue services officers in the performance of their official duties;
- Security dogs, used by and under the control of security services; and
- Other animals kept by the CIT for teaching purposes, subject to the approval.

CIT campuses located at Fyshwick and Bruce are adjacent to bushland or relatively undeveloped areas and are locations where wildlife may be present. It is common in summer for snakes to be seen on and around campus as well as kangaroos, wombats, possums and snakes at the Bruce campus in particular. If wildlife is encountered it should be left alone.

CIT Estate or their representative should be contacted to respond to issues of animals on campus.

Individuals are expected to take appropriate precautions to ensure that they do not place themselves or others at risk by handling animals found on CIT premises.

CIT Estate has the authority to engage local rangers or other approved persons to respond to and/or remove non-approved animals from a CIT premises.
Personal Safety

Moving in and around CIT campuses and carparks can present a range of risks, particularly after hours and when dark at night.

If you need to work after hours or need to work so that your finish time is after dark (which can be a common issue during Canberra winter months) take appropriate precautions as far as you can to park as close to where you work as is possible and park where there is adequate lighting along the pathway to your car as well as in the actual carpark.

If lighting is not working or seems to be inadequate, bring it to the attention of Campus management so that it can be reviewed and fixed.

If you do not feel safe, talk to your supervisor or teacher so CIT can look at what it can do to make the area safer.

Ergonomics

Given the amount of time staff generally spend sitting at a desk using computers or other devices, it is important that the workplace is set up to provide the greatest possible amount of ergonomic support for individuals.

Each workstation will require to be set up differently to suit the individual concerned.

A detailed workstation self-assessment checklist is located on the CIT Staff Information Site (CIT SIS) at the following location along with other guidelines in relation to workstation adjustment: Work Station Assessments.

Manual Handling

Manual handling is one of the most common causes of workplace injury and accounts for almost 40% of all reports.

Manual handling involves any action associated with pushing, pulling, lifting, carrying, holding or restraining any object or person. The item being handled does not necessarily have to be heavy, but could be an unusual shape, difficult to grip or may be handled whilst you are in an awkward posture.
Basic lifting rules that should be followed are:

- Do not try to handle heavy loads without assistance. Generally an individual should not lift more than 12kg without assistance. Lifts of more than 12kg up to 30kg should be a two person assisted lift, and above 30kg mechanical assistance, such as a trolley, lifter or some other lifting device should be used.

- When lifting with the assistance of another person, one person must assume control of the lift to ensure proper coordination so that both persons lift at the same time and just as importantly put the item down at the same time.

- Where the load is dynamic, such as lifting or restraining another person additional caution must be exercised. Where the person may move suddenly, or act in an unpredictable manner, some form of lifting device or additional restraint may be required for the lift to be carried out with the minimal amount of risk.

- Be conscious of your posture, try not to lift anything from a bent over position but maintain a straight back during the lift and when you put the item you have picked up back down again.

Additional information can be found at:


### Lighting

Lighting in workplaces is essential to good safety management. If areas such as toilets and stairwells are not well lit there is often no available natural light to act as a substitute and this lack of light can result in an increased risk of trips and falls.

In general office areas lighting should be sufficient for you to work without having to strain your eyes to see what you are working on.

For office based work it is recommended that the light level should be between 400 Lux and 600 Lux, which can be measured as part of a workstation assessment using a simple light meter.

If lights are not working or they are flickering and not giving even light you should raise this with your supervisor and raise a BEIMS request.
Facilities Management Personnel, Contractors and Visitors

Facilities Management Personnel (CIT Estate)

Facilities Management (CIT Estate) personnel are often at the front line of dealing with emerging WHS issues, particularly in relation to broken, damaged or deteriorating plant and equipment.

Minor repairs will often be carried out by CIT Estate personnel, but in most cases of major work this will be done by external contractors.

The main WHS issues related to CIT Estate personnel are likely to be created by the unpredictable nature of what they come across and on this score they need to be vigilant in ensuring that they do not place themselves at risk to fix an issue for someone else.

On a general WHS front, because CIT Estate personnel are constantly on the move around our campuses they are well placed to keep their eyes and ears open for emerging WHS issues and to ensure that they are brought to the attention of management so that they can be logged, assessed and fixed.

CIT Estate can be contacted by phoning:-

<table>
<thead>
<tr>
<th>Campus</th>
<th>Phone</th>
<th>Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIT Bruce</td>
<td>(02) 6207 4000</td>
<td>0408 487 545</td>
</tr>
<tr>
<td>CIT Gungahlin</td>
<td>(02) 6205 0154</td>
<td>0403 165 891</td>
</tr>
<tr>
<td>CIT Fyshwick</td>
<td>(02) 6205 3148</td>
<td>0418 494 732</td>
</tr>
<tr>
<td>CIT Reid</td>
<td>(02) 6207 3540</td>
<td>0418 487 546</td>
</tr>
<tr>
<td>CIT Tuggeranong</td>
<td>(02) 6207 3333</td>
<td>0403 228 388</td>
</tr>
</tbody>
</table>

Contractors

The WHS requirements for contractors are outlined in detail in the Contractors Manual which should be consulted before a contractor undertakes any work. This includes the requirement to inform and consult with the person in control of the area where the work is being undertaken, especially if work is being undertaken during normal classroom or workshop activity periods.

All contractors must report to the Estate Management Office at the relevant campus to be signed in and to be given appropriate site induction and authorisation to carry out the work required.

At the conclusion of work, all contractors must report back to the Estate Management Office and be signed out. Signing out may involve inspection of the work carried out prior to approval being given.

Visitors

All visitors to CIT must report to the CIT Estate Office of the relevant campus if they are visiting any of the operational or trade skills areas of CIT. This will allow the Visitor to be signed in and given appropriate site induction and instruction in relation to emergency arrangements and mandatory safety equipment if this is required.
All visitors to CIT visiting office and administrative only areas may proceed to the arranged meeting point, where they will be given any required induction and information they need during their visit. Visitors must be escorted at all times.

Office and Administrative Staff

Generally, office and administrative areas are relatively safe environments; however there are elements of safety that staff must be aware of. These areas are covered in the following sections.

General Office Safety

The office environment poses the following hazards:

- Housekeeping - maintaining neat and tidy environment.
- Slips trips and falls - cords run across floors, and secured to avoid trip hazards. Submit a request through BEIMS if they need to be run up walls instead.
- Access and egress – maintaining clear access into and out of the area.
- Emergency exits kept clear from clutter. A general rule of thumb is that these items require at least 1m clearance in all directions.
- Manual handling – items stored at a manageable height.
- Storage – no overcrowding in store rooms.
Chapter Four

CIT Teaching Staff
General Information

Teaching staff at all levels have a specific WHS duty on behalf of CIT in relation to the safety of all students and apprentices. The WHS Act indicates that ‘adequate information, instruction, training and supervision must be provided to all workers’ and as students and apprentices fit into the category of workers so this duty applies at all times.

For students in non-trade training areas that do not involve the use of equipment, but which is primarily classroom based this will be fairly basic and straightforward. Ensuring that the teaching facility is safe, that access to and egress from the learning space is in good condition and that tables and chairs are not damaged will cover most of the risks.

For non-trade students whose learning experience does involve the use of equipment, such as massage therapists or others in health science and other areas involving laboratory like work, the task of managing WHS becomes more complicated.

In addition to the items mentioned above the added elements of equipment safety and use must be taken into account. Each item of equipment must be regularly inspected, ideally before each use, and checked that it is safe to use. Operating instructions must be clearly understood and should be in the form of a SOP, unless the use constitutes a high risk. Appropriate training, instruction and competency assessment must be undertaken and documented to ensure that the student can operate the equipment safely.

Trade Specific

Inside each of the trade areas, there are a number of learning activities that have a range of risks associated with them that can result in serious injury or harm if they are not done safely.

As a means of identifying and controlling these risks, CIT have decided to adopt a consistent approach of describing and controlling the tasks that present these risks by the use of standardised Safe Operating Procedures (SOP), Job Safety Analysis (JSA) and Safe Work Method Statements (SWMS).

Each of these processes is described below and the relevant documents are located within the teaching resources embedded in eLearn or physically on display alongside the particular piece of equipment.

Safe Operating Procedures (SOP)

A Safe Operating Procedure (SOP) is usually a one page outline of how to operate a specific piece of equipment safely. Operation of any equipment is conditional on the operator being trained, assessed as competent and authorised to use the equipment.
It is in a standard format that outlines the PPE and precautions required to operate the machine, the Pre-Operational Safety Checks that you must carry out before using the machine, the operational safety checks that are required, elements of housekeeping that must be followed, identifies the potential hazards that use of the machine presents and outlines the specific prohibitions in relation to the use of the machine.

The SOP has a blue banner across the top and identifies the specific equipment that it refers to. In some cases it may incorporate a photograph of the particular piece of equipment.

Teaching staff and students must follow the SOP when using the specific piece of equipment.

SOP documents may exist in both the trade and non-trade training areas and must conform to the standard and agreed format.

CIT staff are able to access SOP templates via: https://staff.cit.edu.au/__data/assets/word_doc/0008/48509/SOP_Template.docx

Job Safety Analysis

A Job Safety Analysis (JSA) is a basic safety document that outlines the steps in the task to be performed, identifies the risks in each step and outlines the controls in terms of step by step instructions to be followed to do the job safely.

A JSA may be in written form only, it may be a combination of written instructions as well as supporting photographs or it may be in the form of a simple video or video link.

JSAs are essential in outlining how to do a job safely with a minimal risk of injury or harm occurring and are part of the teaching and learning process.

CIT staff are able to access JSA templates via: https://staff.cit.edu.au/__data/assets/word_doc/0018/48510/JSA_Template.docx

Safe Work Method Statement

A Safe Work Method Statement (SWMS) is a document that comes about as a result of a specific WHS requirement of the WHS Regulations 2011.

Within Regulation 291 of the WHS Regulation 2011, **High Risk Construction Work** is listed as any work that:-

a) involves a risk of a person falling more than 2m; or

b) is carried out on a telecommunication tower; or

c) involves demolition of an element of a structure that is load-bearing or otherwise related to the physical integrity of the structure; or

d) involves, or is likely to involve, the disturbance of asbestos; or

e) involves structural alterations or repairs that require temporary support to prevent collapse; or
f) *is carried out in or near a confined space*; or

g) *is carried out in or near*—
   i) a shaft or trench with an excavated depth greater than 1.5m; or
   ii) a tunnel; or

h) *involves the use of explosives*; or

i) *is carried out on or near pressurised gas distribution mains or piping*; or

j) *is carried out on or near chemical, fuel or refrigerant lines*; or

k) *is carried out on or near energised electrical installations or services*; or

l) *is carried out in an area that may have a contaminated or flammable atmosphere*; or

m) *involves tilt-up or precast concrete*; or

n) *is carried out on, in or adjacent to a road, railway, shipping lane or other traffic corridor that is in use by traffic other than pedestrians*; or

o) *is carried out in an area at a workplace in which there is any movement of powered mobile plant*; or

p) *is carried out in an area in which there are artificial extremes of temperature*; or

q) *is carried out in or near water or other liquid that involves a risk of drowning*; or

r) *involves diving work*

Where any teaching task involves any of the above high risk elements a formal and approved SWMS must be developed and implemented for use as part of the teaching process.

CIT staff are able to access SWMS templates via:
https://staff.cit.edu.au/__data/assets/word_doc/0019/48511/SWMS_Template.docx

**Personal Protective Equipment (PPE)**

In many areas of CIT, due to the nature of the requirements of the work that is undertaken as part of the teaching and learning activities, there are specific PPE requirements.

Whilst PPE in specific trade and non-trades areas is mentioned within Chapters Five and Six, the requirement to wear PPE where signage dictates this, is mandatory and must be complied with.

PPE will be supplied by CIT for staff in accordance with the WHS requirements for the identified risks in the workplace and once supplied, wearing it is mandatory.

Remember that PPE is the least effective tool for preventing people from getting injured and its protection depends entirely upon the wearer using the PPE correctly; making sure that it is in good condition and keeping it clean and serviceable.

If you don’t use it correctly PPE is not going to work in protecting you from potential injury or illness.

As mentioned wearing PPE where required is mandatory and failure to do so may result in punitive action being taken in relation to both CIT staff and students.
Chapter Five

CIT Students (Non-trade)
Non-trade students include all students undertaking general class based education and learning as well as many courses that may lead to National Recognised competency based qualifications.

These qualifications may include areas such as:

- Fitness,
- Forensics,
- Nursing,
- Children's Services,
- Aged Care and many other areas.

The following indicates some of the WHS risks associated with the risks in these areas.

## Fitness

The fitness industry is one that is becoming increasingly popular with more people now attending gyms and fitness training sessions than ever before. Fitness leaders need to be fit themselves to not only demonstrate and lead the fitness activities but to also give inspiration to their clients. With this in mind, the need to manage workplace safety is crucial not only for the fitness leader but also for clients attending fitness sessions.

Perhaps the most common issue in the fitness industry is that of muscular strains and sprains. Working in this environment it is essential that you maintain a level of fitness yourself that will provide protection from the risk of such injuries, and always warm up prior to undertaking any exercise activity, either as a participant or as a fitness leader.

Correct and correctly adjusted footwear is important in protection from foot, ankle and knee injuries, remembering that most fitness activities involve running or other movement and any injury to an ankle or knee can be career limiting depending on its seriousness.

Always work within your limits in terms of both strength and endurance and take regular breaks throughout the day. Maintain good hydration at all times.

Some basic good habits about keeping cool will ensure that you do not end up suffering from heat stress during sessions, particularly outdoor sessions in the summer months and from a safety perspective do the same as you would ask your clients to do and wipe down equipment with a towel as you go.

Make sure that all equipment is in good working order and is fully functional in accordance with manufacturer's requirements. Any electrical equipment must be tested and tagged.

In laying out your gym, make sure that there is adequate room to move around between the pieces of equipment and that there is enough space so clients are not on top of each other whilst doing their workout.
Forensics

In the forensics area as part of any forensic exercise you may be exposed to a wide variety of substances that may have the potential to be harmful.

Any breach in the barrier controls provided by the PPE that you are wearing can be potentially dangerous and needs to be treated seriously from a contamination point of view. It can also compromise the integrity of the forensic investigation being conducted.

When working in the laboratory analysing evidence that has been gathered standard laboratory safety protocols apply and must be followed, particularly if you are using or analysing chemicals or chemically contaminated material. Where necessary this work may need to be done in a fume cupboard or inside some form of sealed chamber, such as for the recovery of finger prints.

All electrical equipment must be tested and tagged and if it is portable the frequency at which this happens will be more often and fixed items. Remember with any portable equipment to inspect it each time it is used and if it is damaged do not use it but report it and take it out of use for repairs.

Personal Protective Equipment (PPE)

At times students will be required to handle blood products and other fluids such as semen and saliva (their own). These samples will have been screened for communicable diseases but you must adhere to Universal Precautions to avoid infection risks.

Universal Precautions include: handwashing before gloving up, handwashing after removal of gloves and particularly before leaving the laboratory. Before eating, drinking or smoking, and after every occasion of coughing or sneezing unless already wearing a mask.

Barrier Filters and Goggles

When using specialist lights for the detection of evidence it is essential that appropriate protective eye wear is worn.

The filters and goggles used with the Polilight are as shown in the following tables taken from specific Workshop Manual.

Two filter holders are provided, one with an inbuilt tuning device so that the interference barrier filter can be down-tuned by up to 30 nm, and the other without the tuning capability.

Approximate positions and band-widths on the inbuilt PL10 filters and associated barrier filters are illustrated in the workshop manual.
Table 3. Barrier filters available in Polilight kit (Source Forensics Workshop Manual)

<table>
<thead>
<tr>
<th>Barrier Band Bass Filter</th>
<th>CW (nm) Central Wavelength</th>
<th>HB (nm) Half Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violet: IF415</td>
<td>415</td>
<td>40</td>
</tr>
<tr>
<td>Green: IF565</td>
<td>565</td>
<td>40</td>
</tr>
<tr>
<td>Orange: IF590</td>
<td>590</td>
<td>40</td>
</tr>
<tr>
<td>Red: IF 600 (610)</td>
<td>600</td>
<td>40</td>
</tr>
</tbody>
</table>

Table 4. Goggles available in the Polilight kit. (Source Forensics Workshop Manual)

<table>
<thead>
<tr>
<th>Goggles</th>
<th>EW (nm) Edge Wavelength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Goggles</td>
<td>410</td>
</tr>
<tr>
<td>Yellow Goggles</td>
<td>495</td>
</tr>
<tr>
<td>Orange Goggles</td>
<td>570</td>
</tr>
<tr>
<td>Red Goggles</td>
<td>620</td>
</tr>
</tbody>
</table>

Remember that safety procedures must be followed at all times.

Nursing

Whilst in the teaching environment the physical issues associated with nursing can be relatively well controlled, in the real world of nursing nothing is necessarily quite so certain.

Personal Protective Equipment (PPE)

Basic requirements for PPE in the nursing environment include masks, gloves, uniforms and/or gowns, depending on the nursing task that is being undertaken and is usually outlined in the process referred to as ‘Universal Precautions’ (see below).

Any procedure involving skin to skin contact, including washing, bathing, wound management, administration of intravenous or intramuscular drugs will involve the use of barrier protection in the form of latex gloves and in some cases eye protection.

Universal Precautions

Any nursing work that takes place in any operating environment will require an even higher level of barrier protection in accordance with standard theatre protocols.
Over and above these provisions there is what is referred to as ‘universal precautions’ which add to this environment the control of germ transfer potential by sound processes of hand washing and sterilisation/sanitation.

**Patient Handling and Interaction**

Dealing with people in a hospital nursing environment can be problematic as they are under a variety of stresses related to their illness, their personal circumstances and their general wellbeing status.

Whilst the majority of patients will willingly cooperate with you and assist where they can to do such things as weight bear and stay calm during general treatment and other procedures, there will be a few who are uncooperative and in some cases can become quite aggressive.

The biggest risks to nursing personnel are a) issues such as needle sticks, during any type of procedure to give medication or take blood, and b) muscular and lower back strains trying to move and/or restrain a patient.

The next most challenging issue for nursing personnel is the psychological issue of dealing with the patient who may be suffering a life threatening illness or injury and is terrified of what is happening, particularly in relation to their feeling of loss of control over themselves.

They can become angry, confused, aggressive or depressed and take it out on anyone who comes into contact with them.

Increasingly in nursing environments patient’s family members can become aggressive as a result of personal stress associated with the medical condition of their loved one.

**Children’s Services**

Children’s Services can be a challenging environment from a WHS perspective, particularly when managing young, mobile and active children.

The most common injuries in Children’s Services are those involving trip and falls and those involving muscle sprains and strains.

Muscle sprains and strains most commonly occur from the constant bending down to and lifting of children that are inherent in child care work, remembering that the average three year old can weigh upwards of 15kg.

Even babies as young as 1 year old can weigh up to 10kg and it is not uncommon for near newborns to weigh 4-5kg, and the effort required to pick them up is significant. When this is repeated on a number of occasions over the day this accumulates and can significantly impact on the health and safety of the worker.
Important elements of any child care environment are those associated with:

- housekeeping – keeping the area as clean and tidy as is possible, will help prevent trips and falls;
- lifting children – use good lifting techniques or where possible go down to the level of the child rather than bringing the child up to your level; and
- health management of issues to do with allergies through good identification and management plans and those associated with asthma and related chronic illnesses.

General PPE requirements for child care are fairly basic but do include the wearing and use of gloves for any nappy changes and/or dealing with any bodily fluids such as when a child vomits or when wiping a child's nose.

High standards of hand sanitation should be maintained, particularly as an additional defence against the transmission of disease to children who have much less well developed immune systems.

Dealing with angry and aggressive children can be challenging and a number of incidents have occurred where an angry child has punched, bitten, kicked or thrown items at other children or at a child care worker. Sometimes dealing with these issues can require both skill and patience as well as having clearly established protocols in place for their management.

Additional information regarding manual handling can be found at: http://sharedservices/ACTGovt/WHS/SafetyMgt/RiskManagement/Manual.htm

Aged Care

Aged care can be a physically challenging working environment.

The most common WHS issues in aged care are muscle sprain and strain from patient handling; and slips, trips and falls; which between them account for nearly 70% of all workplace injuries in the industry.

One of the key ways in which the risk of sprains and strains can be minimised is ensuring that there are good patient lifting and handling assessment processes in place so that well in advance of the process you can be prepared for how to lift and move a patient in the most efficient and effective manner that is going to protect your back, neck and shoulders from injury as well as providing a level of comfort and confidence for the patient.

In the area of slips, trips and falls, most of these are caused by contact with equipment, that often has protruding legs or on substances that have been spilled onto the floor.

Personal Protective Equipment (PPE)

As in any personal interaction area of patient care, basic PPE will be required at varying times and age care workers are often involved in the provision of wound care, dealing with bodily fluids and the prevention of transmission of disease under these circumstances is vital. Basic requirements for hand
sanitation will apply as will the use of latex gloves in many circumstances involving the potential for skin to skin contact.

Patient Handling and Interaction

Other risk elements in aged care can come from patient aggression, particularly in Dementia settings or even in general aged care areas where patients may be suffering varying levels of confusion and stress.

Increasingly, patient relatives can become aggressive towards care staff, particularly if they feel their loved one is not receiving appropriate attention.

Making sure you get to know the individual idiosyncrasies of the patients can be your greatest defence, in terms of being prepared for the unexpected.

Veterinary Science

Veterinary Science is a broad and diverse area of practice and can involve interactions with a broad range of animals in a wide range of situations and circumstances.

Personal Protective Equipment (PPE)

PPE in the veterinary science area can be varied depending on the nature of the procedure being performed and the animal being treated. The following sections outlines some of the risks associated with the risks of working within the veterinary area and should be followed.

Handling Animals in Clinic Environments

The risks associated with working with animals are very diverse and can range from bites and stings, being physically struck or trampled by large animals, and the normal risks associated with potential needle sticks through to potentially harmful zoonotic diseases.

As mentioned the injuries to Veterinary staff come as a result of a wide range of issues associated with the interaction with animals in the normal course of daily activities and it is essential that appropriate precautions are taken, particularly in relation to making sure that appropriate personal protective equipment is used at all times and that sharps are properly handled before, during and after any inoculations or vaccinations.

Cuts, scratches, bites and stings are most common amongst veterinary activities involving integration with domestic animals. Cats can lash out with razor sharp claws inflicting scratches that can sometime require stitches and always carry the risk of infection. Dogs similarly can become aggressive and bite, inflicting puncture and tear wounds to the hands and arms particularly but to other parts of the body during lifting and handling.
Handling Animals in Farm Environments

Handling and interaction with farm animals presents another wide range of issues, the most prevalent of which ranges from having your foot trodden on to being kicked by a horse or cattle, or being crushed in yards or holding pens. Smaller horned animals such as goats and sheep can inflict serious puncture wounds if the animal is not properly restrained during treatment.

Zoonotic Diseases

There are a number of zoonotic diseases that can pass from animals to humans, which can be very serious and debilitating. A good guide to veterinary personal biosecurity is available at [http://www.ava.com.au/biosecurity-guidelines](http://www.ava.com.au/biosecurity-guidelines). These precautions are essential for anyone working with animals as there have been a number of cases in recent years of veterinary staff becoming infected with the Hendra virus from infected horses.

Exotic Animals

Working with exotic animals presents yet another range of risks. Handling venomous snakes or fish can have obvious risks, as can working with large wild animals in captivity and there are numerous instances of veterinary staff being seriously injured and even killed as a result of animal attacks.

Driving and Travelling on Unfamiliar Roads

Whilst the road toll in Australia has been generally decreasing over recent years, road accidents are another particular issue for the veterinary community, particularly in rural and remote areas. Many country veterinarians are required to drive long distances over often poorly constructed and maintained roads in all weathers and at all times of the day or night. This increases their potential to be involved in vehicle accidents, either running off the road due to road conditions or personal fatigue issues or being involved in collisions with other vehicles or with wild animals such as kangaroos, wombats or in remote areas wild pigs or emus.

The risks for the veterinarian not only come from the interaction with the animals that they may be treating but also come from the environment in which this work takes place.

Sharps and Blood Products

In laboratories where blood and tissue testing takes place sound safety practices must be undertaken in order to protect staff from disease transmission and infection.

Standard precautions must be followed, including the use of appropriate PPE such as masks and gloves as well as ensuring that there are good infection control practices in terms of instrument sterilisation and disposal of hazardous material, including biohazard waste.
Beauty Therapy

Increasingly, the volume of clients seeking Beauty treatment on a regular basis is growing. As a result the risks associated with providing beauty therapy treatment are becoming more common and affect both people working in the field as well as clients.

Postural Stress

Beauty therapy always involves serving a client that is either sitting in a chair or lying on a treatment bed. Both of these activities can result in postural stress, with the beauty therapist either sitting in chair or on a stool when the client is sitting or either standing or sitting on a stool if the client is on a treatment bed.

It is important in setting up for this work that the height of the chair and/or the height of the bed is adjusted to the correct working height.

Adjust the stool so that you are sitting with your arms in a comfortable working position that puts you at the correct working height so that you are neither having to reach up or reach down to treat the client. The same general rules apply when the client is on a treatment bed. If you are treating from a stool adjust the stool so that it places you at a comfortable working height. If you are standing adjust the bed so that you are not having to bend forward unnecessarily to reach the client to provide treatment. If possible adjust the height of the bed to make it easier to enable the client to get on and off the treatment bed or if the bed is not height adjustable ensure that there is a small stool available.

Postural stress can also result in muscle fatigue, particularly where clients are being given massage treatments for prolonged periods or when there is a successive number of massages to be performed. The pressure that is exerted through the hands and fingers can result in overuse injuries or muscle sprain or strain.

When massaging make sure that you pace yourself throughout the treatment so that you don’t place yourself at undue risk of muscle fatigue or injury.

Sharps and Body Fluids

From time to time it will be necessary for the therapist to use a sharp (usually a lancet) to relieve an ingrown hair or to treat an infected pimple as part of a beauty treatment.

It is essential that when this occurs strict safety protocols are followed in ensuring that you use sterile gloves, that the sharp is a single use item and that once used it is disposed of into a designated sharps container. Gloves and any swabs used to mop up blood or any other body fluids must be also disposed of into a contaminated waste container along with the gloves.
Chemical Safety

Beauty therapy involves the use of a range of chemical products on a day to day basis.

Fumes and chemical sensitivity can become an issue related to the use of chemicals such as acetone for nail polish removal, false nails can involve the use of and working with acrylics and acrylic glues and nail polishes contain both colours and drying agents.

Chemical fumes can also be a problem in spray tanning areas where the chemical is turned into a fine atmospheric mist that is easily breathed in. If the area is not adequately ventilated this can be toxic in creating breathing issues (up to and including chronic respiratory or acute asthmatic responses).

Chemicals must be correctly stored in suitable storage units and detailed chemical safety information needs to be held in the form of Safety Data Sheets on all chemicals.

Waxing and Burns

Depilation using hot wax is a common beauty treatment that can result in the risk of burns as well as the risk of cross contamination if good hygiene practices are not established and maintained.

Wax needs to be at the correct temperature for it to be able to applied easily and then depending on the type of wax being used removed using fabric strips or by gripping the edge of the set wax and pulling to remove the hair.

This process can result in burns to either the therapist or the client if the wax is too hot, or injury to the skin if it is not pulled taught before removal. This injury can include blistering and tearing that can result in blisters or blood coming from broken skin tissue.

Application of the wax should always be performed wearing sterile gloves to prevent the risk of infection transfer in both directions and spatulas for application should not be reused without sterilisation or disinfection. If metal spatulas are used they should be disinfected between uses and if wooden spatulas are used they should be discarded after each use.

Managing potential personal hygiene issues for clients is also an issue that needs to be dealt with from a WHS perspective to ensure that the risk of bacterial transfer between therapist and client is minimised, particularly if the client is having a Brazilian or Bikini Wax.

Electrical Safety

There are a wide range of electrically powered pieces of equipment used in the beauty industry, any one of which can cause injury or death.

Every electrical appliance must be electrically tested and tagged on an annual basis and if it is not tagged it must not be used. This also includes charging units for battery powered units.

Electrical appliances such as facial steamers need to be regularly inspected to ensure that they are fully functional so that low water levels triggers the cutout switch rather than resulting in the potential for super-heated steam or water to splash onto the clients face.
If you are working in the beauty industry you should not take your own equipment into a salon unless it has been tested and tagged.

**Massage**

The broader awareness of massage as a form of preventive health care and rehabilitation has created greater scope for massage therapists to provide services in diverse settings. Regardless of the environment that massage therapists work in or the nature of workplace interactions, WHS is an issue for everyone.

It is the responsibility of the massage therapist to take reasonable care for the health and safety of everyone in the workplace and to work in a responsible manner. Therapists must be aware of and comply with WHS legislation and any workplace requirements to ensure safe practice, remembering that therapists can often be working alone as sole practitioners.

The Association of Massage Therapists ‘AMT Code of Ethics’ contains specific guidelines for the management of WHS in the workplace for massage therapists that covers the following broad areas:

**Waiting room/administration area**

In establishing and managing this element of their workplace or place of business, massage therapists should ensure that they:

- maintain a safe, clean and well ventilated facility
- provide adequate lighting
- ensure appropriate access for the elderly and people with disabilities or refer clients to another clinic
- provide and maintain toilet and hand washing facilities with soap dispensers and single use towels, and temperature control on hot taps
- cover electrical outlets with childproof safety devices
- provide strong comfortable chairs
- provide non-slip flooring (do not use floor mats or have frayed carpet)
- maintain functioning smoke detectors and fire extinguishers
- be familiar with the location and use of fire extinguishers
- clearly indicate fire exits
- be aware of evacuation plan for emergencies with evacuation plan clearly displayed
- keep emergency information posted in plain view near all telephone
- establish a policy regarding the use of open flames and candles
- keep all areas free of obstacles
Clinic area/treatment room

In running their clinical and treatment areas, massage therapists should:

- ensure mandatory cleanliness of clinic area
- ensure appropriate access for the elderly and people with a disability or refer to another clinic
- ensure visual and auditory privacy for treatments in accordance with the individual privacy needs of clients
- provide suitable lighting and ventilation and ensure the clinic area is maintained at a comfortable temperature
- maintain and service heating and ventilation systems/devices, and turn off when not in use
- wash hands before and after each client
- use clean, freshly washed linen for each client
- maintain hand washing facilities with temperature control on hot tap
- carry out standard infection control procedures on reusable items (massage table, linen, oil dispenser etc.)
- carry out regular safety checks on all equipment including electrical equipment (hydraulic tables, towel caddies, microwave ovens)
- use ergonomic table, stools and supports that comply with relevant Australian standards
- keep lubricants in contamination proof containers, clearly labelled
- obtain safety data sheets (SDS) on all products used
- check to make sure that clients are not sensitive or allergic to products used
- provide closed containers for used linen
- be aware that drying linen in a dryer may pose a potential fire hazard due to the presence of any residual oil. ensure correct storage and transport of potentially hazardous waste (contaminated linen, used hand towels, tissues)
- provide non-slip or slip-proof flooring
- keep area free of obstacles for client access and assessment

Storeroom

In managing the storage of materials and supplies, massage therapists should:

- store oils and creams in appropriate conditions
- provide clean, dry storage for clean linen with appropriate linen rotation system
- make sure floors are slip proof
Work processes

In managing the actual process of providing massage therapy, massage therapists should:

- use correct manual handling processes when lifting equipment or assisting clients on and off the massage table
- use appropriate body mechanics and techniques when performing massage to prevent muscle strain and overuse syndromes
- maintain healthy hands with exercises for strengthening and stretching
- know contraindications for massage and work within their own scope of practice
- take adequate breaks and have realistic workloads
- have appropriate strategies in place for dealing with aggressive clients
- have strategies in place for stress management
- implement anti-bullying, intimidation and harassment policies
- maintain a current Health Training Package “Apply First Aid” certificate
- maintain membership of a professional association, keep current with industry developments and engage in continuing education activities
- have current professional indemnity and public liability insurance
- document and maintain work health and safety and infection control policies and procedures including an ongoing risk management plan
- have a spills kit available for the management of blood or body fluids spills including the use of personal protective equipment
- be aware of management procedures for accidental exposure to blood or body fluids

*Note: the above information is sourced from the Association of Massage Therapists ‘Massage Therapy Code of Practice’ 2012.*

Hot Stone Massage

Hot stone massage is one of the modern therapies that is widely used and taught within the Beauty area of CIT.

The following key points should be noted when performing Hot Stone Massage:

- Check stones are not chipped or cracked before use
- Select stones that are the correct size for the therapist’s hands and body area
- Stones must always be heated in a professional heater following manufacturer’s instructions
- Be careful when transferring stones from the heater unit, don’t pass directly over the client’s body, especially the face. Stone may be slippery and you don’t want to drop one on the client
- Do not put warm or hot stones on the eye area.
Building, Engineering, Surveying and Spatial Information

This area within CIT provides training and qualification for the building, engineering, surveying and spatial information fields within the broader construction field.

Many of the activities involve working closely with the construction areas in both commercial and residential and also doing land surveying both ground based as well as using aerial survey techniques.

In many cases people working in the fields outlined are working in someone else’s workplace with limited levels of control or they may be working in isolated or very risky public environment, such as along active roadside verges.

Having a sound approach to the management of the safety elements is core to ensuring that workers come home safe at the end of each day.

Building and Engineering

When building managers and engineers are working in construction environments, whether these are commercial or residential they must be aware of and very vigilant about making sure that they do not place themselves in harm’s way.

On a commercial construction site they must report to the site office (if formally established) and be signed in as a visitor if they are merely there to observe or go through a formal site induction if they are there to do independent work on the project, which depending on what they are doing may involve them in preparing and submitting relevant information to the Principal Contractor in advance.

Whichever way they find themselves on site they will need to ensure that they meet all the site requirements, particularly those related to the provision and wearing of PPE, such as safety boots, safety glasses, high visibility clothing and hard hat, and will require the holding of a Construction Induction Card if you are performing actual tasks on the site.

On a residential site, the site safety rules may be much lower in standard, however so may be the actual management of safety elements. So, whilst the compliance may be simpler the risks may in fact be greater due to the lower level of systematic approach to safety management on the site.

In these circumstances access to the site, and in many cases this might take place without anyone else, or only other tradespersons being on site, may be more problematic and as a result place a higher order burden of responsibility on the individual for their own safety.

If this is the situation that you find yourself in you need to be much more aware of what you are presented with on the site and keep a much better look out for hazards and risks when you are entering and moving about on the site.
Surveying and Spatial Information

The main risks associated with the training of and working in the surveying profession are those associated with working on sites that can vary from an open field, to an active construction site and including very commonly working alongside active roadways.

In some cases surveyors will be working on a site that is controlled by others, such as an active construction site, particularly those involving civil works.

In these cases, the site safety responsibility will primarily rest with the Person Conducting the Business or Undertaking (PCBU) that is in control of the actual site, and the surveyor will need to be site inducted and then either be directed to or supervised on site, depending on the level of activity and the proximity to where the surveyor is working that other site work is taking place.

On an active construction site, similar rules will apply, in that the PCBU in control of the site is responsible for determining, implementing and enforcing the site safety rules and the surveyor must follow these rules at all times.

On larger green-field sites, there may not be any established infrastructure in place and the survey team will have to undertake their own risk assessment to identify and determine what safety arrangements they may need to implement.

In these cases, the process will start with a risk assessment of the site, in terms of access and egress as well as identification of any specific hazards, such as existing or old structures, washaways, holes, penetrations or old excavations. Once these are identified, a detailed plan needs to be developed and communicated to all the members of the survey team to ensure that they know where they can go and what they can do and more importantly, what to do in the event of an emergency.

On roadside areas being surveyed, depending on the nature of the work to be undertaken it may be necessary to establish a Temporary Traffic Management Plan (TTMP) that may or may not have to be formally approved.

This TTMP will usually involve the erection of warning signs that there are ‘Surveyors Ahead’ but may also involve temporary speed restrictions as well (in this latter case, this would be where the TTMP would need approval from the relevant road management authority, such as Roads ACT or in NSW from the local council or the RTA.

Workers operating under these circumstances, must wear high visibility clothing to increase their visibility to passing motorists, should always keep an eye on traffic movement and approaching traffic at any location where they are working and stay in contact with each other (most likely by two-way radio).

Increasingly, traditional survey work is being supplemented by aerial survey work using drones, which present an additional level of complication, not only for those workers involved in their use but also any other activities in the near proximity.

The use of drones in open fields is relatively safe and potentially incident free, however the use of drones in other areas is surrounded by strict regulatory controls determined by Air Services Australia, and breached currently carry significant fines.
Where workers operating in the aerial surveillance space are operating drones they need to check and ensure that they have the appropriate licenses and approvals and know and follow the rules associated with drone operation.
Chapter Six

Apprentices (Trades)
The following information is applicable to both teaching staff and apprentices and should be read in conjunction with any specific requirements for the particular workplace that you are in and supplements the information contained in the relevant teaching resources for specific competencies.

Workshop Safety

Any workplace environment can present a range of risks and in workshops where there may be a number of people working on a number of projects all at the same time, this can be magnified.

Inside CIT workshops a lot of effort goes in to making the workplace safe for your learning experience to take place, but this can be easily undone if you don't follow the rules that have been established.

Always work in accordance with the directions you have been given by your teacher, which are on display in the workshop or are contained inside your learning materials. There cannot be any exceptions or shortcuts. These same rules apply for teaching staff giving instruction in the workshop.

Safe work procedures have been developed for a specific purpose and in a specific manner and that is to ensure that the risk of you being injured or becoming ill in the workplace is minimised to the greatest degree possible.

If the procedures say you do something in a specific way, do it that way. If the procedures say not to do something, then don't do it. If you are not sure of how to do something or not confident you understand how to do it, don't do it no matter how confident you might be that you know what you are doing.

If you have not been given approval to do something or authorisation to use a particular piece of equipment, don't use it until you are approved, which will usually involves some form of competency evaluation, and you are authorised and approved.

Personal Protective Equipment (PPE)

Some tasks or areas of the workshop will have Personnel Protective Equipment (PPE) requirements. It is imperative that you follow the mandated requirements at all times as failure to do so may place you and/or others in the workplace at risk of injury or illness.

PPE requirements will be reinforced with signage (see next page) that indicates what is required, and it should be noted that failure to comply with any mandatory requirements regarding PPE carry the potential of disciplinary consequences.
Signage

Safety signage comes in a number of different configurations. These are:

- Signs with a blue background indicate that the wearing of the PPE is mandatory.
- Yellow signs, that are either square or triangular with black writing or images indicate that caution should be exercised in relation to the activity indicated.
- Signs with a red circle indicate that the activity or wearing of certain items is prohibited.

Common safety signs are as below:

<table>
<thead>
<tr>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Eye Protection]</td>
<td>Eye Protection must be worn</td>
</tr>
<tr>
<td>![Foot Protection]</td>
<td>Foot protection must be worn at all times</td>
</tr>
<tr>
<td>![Loose and Long Hair]</td>
<td>Loose and Long hair must be restrained</td>
</tr>
<tr>
<td>![Protective Clothing]</td>
<td>Protective clothing must be worn</td>
</tr>
<tr>
<td>![Hearing Protection]</td>
<td>Hearing Protection must be worn</td>
</tr>
<tr>
<td>![High Visibility]</td>
<td>High Visibility clothing must be worn</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Welding Mask]</td>
<td>Welding mask must be worn</td>
</tr>
<tr>
<td>![Hand Protection]</td>
<td>Hand protection must be worn</td>
</tr>
<tr>
<td>![Forklifts]</td>
<td>Warning that forklifts operate in this area</td>
</tr>
<tr>
<td>![Breathing Apparatus]</td>
<td>Breathing apparatus must be worn</td>
</tr>
<tr>
<td>![Authorised Entry]</td>
<td>Authorised entry only</td>
</tr>
<tr>
<td>![Mobile Phone]</td>
<td>Mobile phone use banned in workshop</td>
</tr>
<tr>
<td>![Hand Jewellery]</td>
<td>Hand jewellery must NOT be worn</td>
</tr>
</tbody>
</table>
Workshop Rules

General workshop rules are:

- Only use equipment you have been trained to use, have been assessed as competent to use and you have been authorised to use;
- Keep work area generally and specifically around machines clean and tidy, remove any waste material to designated waste collection points and place in bins;
- Where machines are fitted with guards, they must be in place and used at all times when the machine is in operation;
- Long hair must be restrained and do not wear hand jewellery when operating any equipment;
- No smoking (including e-cigarettes) in the workshop – remember that the whole of CIT is a smoke free environment;
- No skylarking or messing about. Concentrate on what you are doing and work to ensure that your own and other people’s safety is protected, do not distract others in the workshop;
- Wear indicated PPE and suitable clothing at all times when in the workshop and obey all safety signs;
- Never use compressed air for cleaning clothing;
- Anyone affected by drugs (illicit or prescription) or alcohol are not permitted in the workshop;
- No food or drink in the workshop;
- Wash your hands after working with equipment and before eating or drinking at breaks;
- Put all tools away in their designated location when you are finished using them;
- Know where the first aid kit and emergency egress points are in relation to the workshop;
- Do not wear gloves when operating any rotating equipment or where there are trap points in any machine;
- When welding, ensure that any flammable substances are removed from the work area, including any items such as cigarette lighters from your pockets;
- Only use chemicals in correctly labelled containers, and wear recommended PPE; and
- Do not use or answer mobile phones in the workshop.
Chapter Seven

Trade Specific WHS Provisions
Electrical and Refrigeration

Electrical

All work with energised electrical circuits is classified as High Risk Construction work and must be undertaken in accordance with a Safe Work Method Statement. (See Chapter 4).

The most obvious risk in the electrical industry is electricity and despite being trade qualified many electricians each year give themselves an electric shock or in some cases electrocute themselves.

Most commonly, electrical shocks occur when the electrician has decided to ‘work live’ so that it minimises the disruption to the household or business but this results in the system in the house/business or to the appliance that they are working still being energised. This includes doing switchboard work.

The reality is that often electrical circuits, particularly in older buildings, may be poorly planned and inappropriately labelled so that in shutting off one circuit and assuming that the power has been isolated may not be the case. Repeatedly, electricians get caught out in these circumstances by not checking that the circuit that they are about to work on is in fact de-energised and getting a shock as a result.

Other issues for electricians arise from other working environmental conditions that they encounter on the job site.

Working in roof spaces, working under floors, working in tight and cramped spaces all present specific risks that need to be addressed on an individual basis and are best handled by having some basic risk assessment processes in place.

Working in roof spaces in the summer heat can result in heat stress and collapse, with the result that the electrician may require emergency rescue and recovery. During summer, it is a good idea to make sure that you remain well hydrated and if possible arrange additional air circulation into the roof space, by removing roof tiles or removal of roofing sheets.

Similarly, working under a floor can result in physical collapse, again requiring emergency evacuation. Precautions to take involve ensuring that the work is done when it is coolest during the day and having a fellow worker on site as well.

One of the key elements that impacts on some of the above elements and makes them fundamentally worse is that often an electrician may be working alone with no offsider or no other tradesmen working in close proximity. This requires different strategies to be adopted from a WHS perspective and may involve a ‘call in’ system with a colleague or fellow worker who may be on another site and/or making sure that the homeowner is aware of what is going on.
There are some situations such as working in a defined confined space (High Risk Construction Work, Regulation 281 f of the WHS Regulation) that have strict WHS regulatory requirements around them requiring anyone entering the space to have a confined space ticket and a formally established and implemented confined space entry system, including emergency recovery.

Remember with any confined space activity, if the person in the confined space collapses, only use the rescue rope to recover them. Under no circumstances enter the confined space yourself; otherwise it is highly likely that there will be two recoveries required.

The second riskiest activity but one that results in more injury than electric shocks is falls from height. Electricians are often working in roof cavities, either walking or crawling on the roof beams and can if they lose their footing or if a roof beam is damaged or defective it can collapse under their weight and they fall through the ceiling to the floor below, often striking themselves on the furniture in the room which they fall into or falling to the floor, which depending on the ceiling height may be up to 3m below.

The other common fall potential is from ladders, either step or extension and falls of up to 4m or more are possible when working on the outside of a two storey house.

Similar to confined space work there are strict WHS regulatory requirements that apply where there is a risk of falling 2m or more (High Risk Construction Work Regulation 291a) that must be reflected in a more formal approach to the management of safety.

Some basic rules to apply at all times when using ladders is not to climb above the second top rung of the ladder, make sure the extension ladder extends at least 1m past the point of the roof against which is leant and is set at a 1:4 ratio, making sure that it is attached at the top to the roof gutter or building façade, and maintaining 3 points of contact at all times when climbing up or down a ladder.

This latter point means that tools being used should either be attached to a belt or strap or hauled up to working height in a bucket or tool tray.

Importantly, and this applies to most trades, is the issue of motor vehicle accidents. For an electrician with a van full of equipment, taking evasive action in the event of a road traffic issue is fraught with danger as in many cases the vehicle is operating close to its maximum load capacity and the way the vehicle is loaded may affect the balance and handling of the vehicle.

Remember to keep the vehicle within the manufacturer’s rated carrying capacity, make sure that it is regularly serviced, checking particularly tyre pressures and wear and drive defensively, keeping a good look out for other inattentive road users.

And finally, if you are going to spend a deal of time on the road between jobs, invest in a good hand-free device for your vehicle so you are not tempted to use your mobile on other than hands-free whilst you are driving.
Refrigeration and Air-Conditioning

As a result of a survey conducted by the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH) the following key safety concerns were identified and are highlighted for consideration by people working in the field.

The four key areas of safety concern that were identified by the survey conducted by AIRAH are:

- Quality and Training
- Access
- Working Fluids
- Electricity

**Quality and Training**

Concerns about the WHS issues related to this come from the survey results where it was highlighted that in many cases workers are being placed at risk when they follow on performing work, particularly at the maintenance stage, from work that has been performed at a less than competent level.

Workers in the industry need to be vigilant in when they go to a site if the work that has been done to install or commission existing plant has not been done in a competent manner or provides clear evidence of being done in a shoddy manner that they do not place themselves at risk of assuming that it is okay to work on.

Examples of sub-standard work that were highlighted in the survey included low quality brazing leading to refrigerant leaks and isolation or disconnection of condensate pipework leading to uncontrolled water flow that subsequently could place the next tradesperson at risk.

**Access**

This is a perennial problem, not only for the HVAC industry but also for any trades involved in providing service and maintenance callout services.

These risks can involve issues with safely accessing roof areas and roof spaces, working at heights with limited or inadequate fall protection and insufficient space around the plant to be able to work safely and without risk of becoming entangled in the plant.

Of particular concern in relation to access and working at heights is the overuse of vertical ladders that may have a vertical safety line leading to a roof area. As the vertical line constitutes a formal fall arrest system, the worker needs to have both the correct type of fall arrest system as well as having the appropriate training and competency in relation to the work at height to be conducted.

Workers should not place themselves at risk by working at height where a fall arrest system is fitted or required, without the appropriate competencies as well as having the right type of fall arrest system.

In terms of tight spaces, make sure you are not putting yourself into a confined or constrained space without appropriate back-up arrangements in place.
**Working Fluids**

The survey identified issues related to refrigerants and oils, including flammability, toxicity and inappropriate retrofits.

As with any chemical substances these should be treated with extreme caution, and when working with them you should ensure that the substance has been correctly identified and appropriate safety information in the form of a Safety Data Sheet (SDS) has been obtained and consulted. The SDS will outline the safety precautions, particularly in relation to handling and transport that need to be put in place when using the substance.

The additional risk associated with these fluids being used under pressure is also a matter that needs to be carefully considered and you should not place yourself at risk if it is not safe or the integrity of the pressurised system has been compromised.

**Electricity**

An obvious issue for the HVAC industry is that associated with electricity. Every HVAC system is connected to the electricity supply and when it is being worked on needs to be made safe.

In many cases the major issue arises when the existing electrical system is sub-standard and/or has been wired so that the HVAC cannot be easily isolated and made safe. In these cases, the service personnel may have to resort to isolating the whole of the electricity supply in order to make it safe, rather than just isolating the HVAC.

**Other Issues**

Other issues identified in the AIRAH survey included:

- Exposure to other chemicals, as well as exposure to asbestos in older buildings;
- Travelling to and from site, particularly in overloaded service vehicles;
- Manual handling injuries in carrying tools and equipment;
- Working outdoors and exposed to weather;
- Working on active construction sites;
- Inaction of owners on previously identified hazards;
- Irate and unhappy customers.

Workers in the industry need to be aware of the risks and take appropriate precautions in the form of ensuring that they follow good safety planning and don’t take shortcuts.
Plumbing and Gas Fitting

The following information is based on discussion with the Plumbing area of CIT as well as examination of material available from the Master Plumbers Association.

Plumbing, Gas Fitting, Draining and Roof Plumbing

There are a wide range of risks and hazards associated with these four broad but closely linked trade based skills, with some specific to individual areas and others general across the whole spectrum.

General Issues

Manual handling

Manual Handling is an issue in all workplaces and in those that involve the lifting, carrying, pushing or pulling of plant and/or equipment this is more problematic. The management of plant and equipment across all of the four areas involves workers carrying a wide range of equipment and materials from a bag full of tools to 6m lengths of PVC pipe. Where possible break the load down into smaller consignments or get some assistance from a co-worker to move heavy items.

Excavation

Excavation is part of plumbing and draining and often involves either hand digging or mechanical excavation, including digging beyond 1.5m. This then triggers the consideration of the activity being a High Risk Construction activity and the requirement for a formal Safe Work Method Statement under Regulation 291g (i). This means that additional safety precautions must be taken including where necessary the battering or shoring of the trench.

Hot works

A number of tasks in plumbing and gas fitting involve the use of heat to join pipes together under the general heading of hot works. This can involve the use of a simple butane burner when soldering or Oxy/ Acetylene or Arc welding to join heavier metals together.

One of the key risk elements associated with the use of gases for soldering and welding is the transport and storage of the bottled gas. In many cases LPG is stored in a bottle that may be unsecured or improperly ventilated in the tradie van and there have been a number of incidents where gas bottles have leaked and subsequently exploded, with sometimes fatal consequences. Oxy/Acetylene bottles must be kept upright and chained to a fixed or mobile structure such as the tray back of the Ute or on a portable trolley.

Remember that LPG is heavier than air so if the bottle leaks the gas will settle at the bottom of the van or truck; Oxygen is also marginally heavier than air and will also settle at the bottom of the vehicle, whilst Acetylene is lighter than air so if it leaks it will collect at the top of the vehicle. Given this it is important in enclosed vehicles carrying LPG and Oxy/Acetylene to have ventilation at both the top and bottom of the van to allow any leaking gas to escape to the outside atmosphere.
Contaminated Substances

Contaminated substances is perhaps the most common issue that plumbers, drainers and roof drainers come into contact with, either of water or soil, and most obviously when dealing with sewerage or septic systems. Workers in the industry that come into contact with these elements need to take some basic but consistent actions to protect themselves from the risks associated with working in contact with these substances. Waterproof gum boots are essential when working in wet or contaminated conditions, as are gloves when working with sewerage lines. The use of face masks to prevent liquids splashing into your mouth and safety eye wear to prevent liquids splashing into eyes.

Basic hygiene is also important in ensuring that after you have finished working with sewer or septic systems you carefully and thoroughly wash your hands and face before eating or drinking. In areas where water may not be readily available a suitable substitute is to use an anti-bacterial hand gel.

Similar issues can arise when working with stormwater as it can also be contaminated with material that it has picked up or absorbed from the surfaces on which it has been collected on or run over. Consider the risks associated with stormwater running across a section of a decorative copper roof, in this case the water will pick up the copper from the roof and the water will be contaminated with copper, which is a heavy metal. Similar conditions will also occur where roof sheeting contains lead joins.

Confined and/or constrained spaces

Confined and/or constrained spaces are another specific hazard that workers in the industry can come into contact with through having to work under floors or in roof cavities, having to work in stormwater and sewerage pits and having to work inside septic tanks.

Where an aspect of a workplace has been formally designated as a confined space, then working in it becomes a High Risk Construction activity under Regulation 291f, and this then requires the development of a Safe Work Method Statement and the implementation of a formal confined space entry process, including providing rescue and recovery.

It is important to remember that if an emergency does happen inside a confined space that the person in the space needs to be recovered using the safety line. Under no circumstances should anyone else enter the confined space without breathing apparatus, otherwise there will most likely be two casualties that need to be dealt with.

When working in constrained spaces such as roof cavities or under floor spaces, whilst not strictly meeting the confined space criteria similar precautions should be taken, particularly if you are working alone or in an isolated location. Consider setting up a call back system with your boss or a colleague if you are working for someone or with another tradesperson in the vicinity, so that you let them know when you go in and how long you will be and let them know when you come out at the end.

Chemicals

The use of chemicals in the plumbing, drainage and roof plumbing is common, particularly in relation to the glues and solvents used for the assembly of pipework and the use of soldering flux for the joining of copper pipes is quite common and like any other activity involving the use of chemicals needs to be treated with a high degree of caution.
Many of the glue products are highly astringent and can cause breathing difficulties for anyone with underlying medical conditions such as asthma. These same products can cause major skin irritation in some people, who may be allergic to the astringent qualities in them.

When using cement powder, care also needs to be taken in terms of breathing in the fine dust, which can also lead to breathing difficulties or skin exposure to either the dry powder or to the wet cement which can cause short term skin burns and long term dermatitis conditions.

If you know you are sensitive to chemicals contained in the products you are using then use of gloves or barrier creams will protect your hands. If you are allergic or sensitive to dusts from cement products then wearing a dust mask is an ideal way of limiting the risk of exposure.

**Working at heights**

Working at heights is another activity that is common within the industry, more particularly for roof plumbing than other aspects but none the less one that needs to be given close attention.

Falls from ladders and roofs is not only more common than you would expect but when they do occur they can result in debilitating injuries and often fatalities.

Working at heights, where there is a risk of falling more than 2.0m is yet another specific **High Risk Construction** activity covered by **Regulation 291a**, and like other high risk activities triggers the automatic need for the development and implementation of a Safe Work Method Statement.

In terms of safety procedures it also may require, if the work is done other than from a fixed or mobile scaffold the use of scissor lifts and/or boom lifts as a safer option that working off a long ladder or some form of trestle.

With the use of scissor lifts and boom lifts this then requires the holding of relevant high risk licenses and competencies and the use of harnesses for fall prevention. These can only be used once the person doing the work has completed the appropriate training and has been issued with the appropriate high risk competency ticket.

Other falls can be just as hazardous, even if the height is not as great as outlined above. A fall from a small step ladder can still result in broken bones, or dislocated joints that will result in significant time off work to recover.

Any work above ground level that involves standing on a ladder or other raised platform must be approach with due care and planning to ensure that the platform is stable and secure before being used and that you don’t overreach when you are on the ladder or platform.

**Working on pressurised systems**

Working on pressurised systems, particularly gas (LPG, CNG of NG) is again classified as a **High Risk Construction** activity and is covered under **Regulation 291i**. It therefore again triggers the requirement for the development and implementation of a Safe Work Method Statement, due to the high risk nature of the work. Workers working on such systems need to ensure that they or the supplier has isolated the gas supplies to the section of the piping that is being worked on and that the pipework has been purged of gas build-up. The purging needs to be tested and proven before the work commences.
Slips, Trips and Falls
The other more general issues within the industry involve the usually encountered risks of slips, trips and falls, which is always problematic in the construction sector given the ever changing nature of the environment in which it takes place.

The best way of dealing with many of the slip, trip and fall risks encountered in the construction industry is to closely focus on the maintenance of good housekeeping practices to ensure that the workplace and particularly access to and egress from it are kept clean and that rubbish on the site is placed into rubbish skips on a progressive basis.

Power Tools
The use of power tools such as drills, along with hand tools such as hammers and digging equipment such as shovels and picks also raise issues associated with their maintenance and storage and in the case of any electrical tools the aspect of testing and tagging must be appropriately managed.

Automotive, Mechanical and Electrical

Working on vehicles, whether they are small sedans, large trucks or even earthmoving equipment can present a range of safety related issues, both within established and organised workshops or when the work takes place on the roadside or on a worksite.

The following information is based on a publication ‘Automotive Workshop Safety’ produced by WorkSafe Victoria.

Working around vehicles – Workshops
The average mechanical workshop, particularly the larger ones with multiple work bays is one in which there is a constant movement of pedestrians and vehicles in and around the space.

The key risks that need to be managed include:
- Traffic movement
- Work areas
- Pedestrian traffic
- Driving vehicles
- Preventing movement of vehicles
- Slips, trips and falls

Traffic movement needs to be controlled to ensure that vehicles are moved in a predictable manner and that there is appropriate directional controls. This is particularly important where traffic movement takes place in proximity to other non-mechanical workshop activities or is adjacent or near to pedestrian footpaths.
The separation of work areas is an element of ensuring that there are limitations placed on the risks of mechanical work impacting on other work that is being done nearby and therefore creating risks for other than mechanical workers.

The same risks associated with the movement of pedestrians, whether they are other workers from elsewhere in the business, or customers coming to pick up vehicles needs to be managed by having clearly defined pedestrian paths, including go and no-go areas within the workshop.

Driving of vehicles in a tight and dynamically changing workspace can be challenging at the best of times so strict rules need to be developed and implemented to ensure that there is adequate control of vehicles being driven into and out of the workspace. The other element of driving vehicles is managing the aspect of ensuring that workers do not drive outside their license conditions. This is particularly important if the vehicle is a truck or bus that requires a special licence.

Once the vehicle is placed in the workshop, arrangements need to be made to ensure that it does not move unexpectedly whilst being worked on, or that parts of the vehicle do not move or collapse. Chocking wheels, or raising the vehicle on a hoist will prevent vehicle movement accidentally. A basic and fundamental step in managing this aspect is to ensure that the keys are removed from the vehicle before work commences on it.

Moving in and around the workshop can present a high risk of slips trips and falls, particularly when the issue of spillage and leakage of vehicle fluids is taken into account. Appropriate protocols need to be established and implemented to ensure that spills are contained and cleaned up and that there is a regular cleaning regime that underpins general workshop safety.

**Working around vehicles – Other workplaces**

A significant amount of automotive work takes place outside the formal confines of a workshop in such locations where roadside assistance is provided or vehicle repairs or maintenance take place in someone else’s workplace, such as on a construction site or in a forest.

The first safety element that must be managed in the situation outlined above is that of getting the worker to the site where the work is to be carried out. This will mean that a service vehicle will need to be driven to the location for repairs to take place and that the control of the place where the work is to be done will have varying degrees of control ranging from potentially a closely controlled environment on a civil construction site to no external controls on a roadside service call.

The conditions at the work location where this is a controlled location operated by someone else may be quite strict and the worker will be subject to their controls and rules more so than any that the employer might consider putting in place per se.

Notwithstanding this there may still be issues associated with the specific part of the site on which the work takes place, particularly in relation to whether this is isolated and secured from other site activities or whether it is in the middle of the site with a lot of other site activities continuing around where the work is being done.
In many cases of onsite service being provided this will involve hydraulic work, where the work involves working on high pressure systems, or tyre work, which in the case of trucks and large earthmoving vehicles will involve the movement and handling of large truck or earthmoving tyres weighing up to many hundreds of kilos. In this case there will need to be access to and use of heavy lifting equipment.

Where this work takes place on the roadside, the first thing that will need to be put in place will be temporary traffic management in the form of temporary signage, flashing lights and safety barriers. If possible, consideration should also be given to moving the vehicle to as secure a location as possible off the road or further away from the road to provide a higher level of safety separation for the work to take place.

One of the other key areas of providing onsite work is maintaining a level of communication with workers engaged in this work, particularly if they are working in isolation, alone or at night. Communication may need to be by way of mobile phone, 2-way radio or in exceptional cases may involve the use of satellite phones.

Other elements in the general area of workplace safety in the automotive mechanical area include:

- Lifting equipment – including trolley jacks, jack stands, vehicle hoists and lifting arms
- Storage and racking of parts – particularly problematic in heavy vehicle areas and tyre fitting services
- Managing awkward postures – bending over engine bays or working in foot wells under the dashboard
- Dealing with asbestos – many older vehicles and some imported new vehicles are fitted with asbestos brake linings and dust is respirable
- Fitting tyres and wheels – lifting and holding them in place, moving them within the workshop.

**Automotive Electrical**

The risks for workers in dealing with auto electrical issues relates to the potential for electric shock when grounding an active wire to an earth point on the body or frame of the vehicle.

Whilst most cars are 12 volt, heavy vehicles usually run 24 volt systems, which when coupled with the amperage of the system can in both cases result in the risk of severe electric shock and/or burns to the hands and fingers making contact to allow the current to pass to the body of the vehicle to complete the circuit.

A major emerging issue in relation to auto electrical work is the work on electric vehicles that have large battery storage banks. As this is still emerging technology more information is being developed.
Panel Beating and Spray Painting

The following information is based on material produced and displayed on the WorkCover Queensland website under the general heading of Spray Painting.

The key safety issues identified as being of major concern within the industry are:
- Hazardous Chemicals
- Dust
- Machinery and Equipment
- Fire and Explosion
- Electrical Safety
- Confined Spaces
- Heat

Hazardous Chemicals

In the panel beating and spray painting trade, the risks of hazardous chemicals include paints, solvents, powders, acrylic lacquers, enamels, paint removers, resins, adhesives, surface preparation products, rust converters and rust removers. Any of these products can create significant health and safety risks for workers in the industry.

Hazardous chemicals may be inhaled, swallowed or absorbed through the skin and eyes so it is important to ensure that adequate protections are in place and used.

Health and safety risks from short term exposure include minor issues such as contact dermatitis, headaches and nausea through to major and chronic conditions such as lung cancer, reproductive system damage, kidney or liver damage and ‘painters syndrome’ (Chronic toxic encephalopathy) a disease that affects the brain.

Controls of potential exposure to the effects of hazardous chemicals include:
- Use a spray booth where possible
- Use mechanical ventilation where a spray booth is not possible
- Use fans and fresh circulating air if either of the above is not possible
- Use water based paints rather than solvent based paints
- Automate the process to isolate the worker from the application
- Use HVLP spraying rather than conventional spraying processes
- Avoid dry sanding without extraction systems in place and operating
- Ensure that appropriate PPE is supplied and worn at all times

Safety Data Sheets need to be held on all chemicals used in any workshop and these must be kept up to date in ensuring that they are no more than five years from the date of issue.
There are some chemicals that should not be used for spray painting, which are highly toxic. These include:

- Arsenic and its compounds
- Benzene
- Carbon disulphide
- Free silica (used for sand blasting)
- Lead carbonate or any lead products
- Methanol
- Tetrachloroethane
- Tetrachloromethane (Carbon Tetrachloride)

**Dust**

Dust is an ever present issue in the panel beating and spray painting industry, given that every surface that needs painting needs to be prepared first and this involves sanding. Sanding, always creates dust and what this dust is and how it is handled presents a range of issues to workers in the trade.

Recommendations for reducing dust escape include:

- Using wet sanding processes where possible
- Using tools that have built-in extraction or connecting to dust extraction systems

Other methods of reducing dust levels in workshops include:

- Using local extraction systems;
- Provide adequate general ventilation through normal air flow;
- Create a separate work area to segregate the dust from general work areas;
- Use vacuums rather than brooms to clean up whilst reducing the amount of dust in the atmosphere, also use HEPA filters to remove high hazard dusts;
- Wet down spray painting areas prior to clean up to reduce the level of potential explosive chemicals in the atmosphere;
- Don't use compressed air to blow dust or contaminants from clothes.

To reduce inhalation of dust a respirator that meets the requirements of Australian Standard AS/NZS 1716:2012 should be used.

**Machinery and Equipment**

In panel beating and spray painting there are a number of pieces of equipment that are used, ranging from spray booths and spray guns, handling of actual vehicles under repair and during spray painting and vehicle hoists, jacks and frame straighteners.
Spray Booths
Spray Booths have to be designed and built to comply with Australian Standard AS/NZS 4114.1:2003 and must be regularly checked and maintained to ensure that they continue to meet this requirement.

Each spray booth should have a certificate of compliance on it to demonstrate that it has been checked and tested and is certified for use. If it does not have such a certificate it should not be used until it is certified.

When spray painting vehicles in spray boots and bake ovens, LP gas tanks and fuel tanks should be removed where possible to reduce the risk of fire or explosion. Where this is not possible, bake ovens should be operated at a temperature where it is not possible for fuel vapour or gas to be released to the bake over atmosphere.

Vehicle hoists, trolley jacks and frame straighteners
All vehicle hoists, trolley jacks and frame straighteners should be regularly inspected. Vehicle hoists must have a registered design lodged with the local WHS regulator and trolley jacks must have a safe working load marked on them. Inspection prior to use is a good way of ensuring that they remain fit for purpose.

Fire and explosions
Fire and explosion is one of the most dangerous situations that can occur in any spray painting facility. Many paints contain flammable substances and spray painting is hazardous if painting mist comes into contact with an ignition source.

Control the risks of fire and explosion by:
- Removing and eliminating open flames such as matches, lighters, cigarettes, welding and cutting torches;
- Allowing hot surfaces including engines to cool down and allowing heat lamps to cool;
- Managing chemical reactions that can cause heat, such as mixing two part epoxy paints;
- Reducing the risk from electrical equipment located in the vicinity of where flammable substances are stored.

Electrical Safety
Electrical Safety is a risk that all businesses must manage and in spray painting the risks is of electric shock and burns.

Metal containers can build up static charges which can spark when they touch another metal object. This can be managed by using earthing straps.

Other ways that electrical risks can be managed include:
- Keep electrical equipment a safe distanced from spray painting zones;
- Ensure that any electrostatic spray systems are only operated by trained spray painters;
- Have a separate electrostatic spraying area specifically designed and set up for this process;
Remove paint and solvent drums from the spray zone;
Earth equipment and metal surfaces that are within 3 m of the charged head of the spray gun;
Remove metal items (watches) and silk or synthetic fibres before entering the spray zone (these items can hold a static charge);
Wear antistatic footwear;
Check electricity supply is switched off before cleaning spray gun.

Confined spaces
Confined spaces are sometimes encountered when working in spray painting, which have poor ventilation or restricted entry or exit provisions. If possible remove the item from the confined space for painting, use mechanical ventilation to improve air flow or use breathing apparatus and only allow people with correct PPE into the spray area.

Heat Stress
Finally, heat stress can occur when people performing spray painting are wearing incorrect or inappropriate clothing and when coupled with the risk of dehydration this can result in collapse.

Ensure that workers are appropriately dressed and well hydrated at all times when working in spray booths and ensure that they do not spend too long in the booth without taking a break out into cooler fresh air.

Metal Fabrication

The following information is based on the Victorian Guide to Metal Fabrication, produced by WorkSafe Victoria.

The above publication identifies hazards associated with the metal fabrication industry as those including:
- Manual Handling
- Hand Tool Usage
- Guarding of Equipment

Manual and Material Handling
In many aspects of Metal Fabrication there is a significant level of manual or material handling involved. This commences from the time that the raw material arrives and progresses through the cutting, manufacture and finishing of goods prior to their loading and outward despatch to the client.
Unloading material
When unloading material ensure that the appropriate equipment is used, such as forklifts and/or cranes, ensure that operators are competent and licensed and that forked loads are secure. Ensure that if cranes are used that loads are competently and properly slung and that clear space is allocated for the movement of materials from the unload point to the storage location.

Moving material
When moving material within the workplace, depending on the weight of the item, again it may need to be moved by mechanical means rather than manually handled.

For heavy items use a forklift, bridge or gantry crane if one is available rather than using manual processes. Manual process should only be used for light material and even then if it can be mechanically handled this is preferable to manual handling.

Workstations
Workstations should be designed so that the material being worked on is placed at the optimal height to avoid constrained or sustained postures that can cause muscle fatigue or in the longer term permanent back, neck or shoulder pain.

Ideally work stations should be set at a height where the operator is able to stand and work between chest, (or just below) chest height and waist height. Where the workstation is set so that the operator is seated it should be set just above waist height.

Handling and loading material
Loading and handling of finished products should broadly follow the process of receiving raw materials, but must take into account the fact that the finished goods may be awkward in shape and size. Loading should be undertaken using mechanical lifting assistance such as a forklift or crane, or a Hy-ab if the truck is fitted with one. Again any slinging of loads must be undertaken by a competent person with the load secured by chains or straps once loaded.

Hand tools
The most common hand tools used in metal fabrication work are angle grinders and welders (oxy, arc, mig and tig).

Angle grinding involves the use of a hand held grinder, which depending on the task being performed, may be fitted with a cutting/grinding wheel between 4” and 9” (100mm to 270mm). Some are fitted with a fixed speed trigger and others have a variable speed trigger so that the RPM can be varied.

Depending on the task and what is being cut or ground significant amounts of spark showers can be created, thus increasing the risk of fire and explosion. In addition depending on the nature of the work, the cutting or grinding wheel can catch or jam, thus either throwing the item being worked on or throwing or twisting the grinder in the operators hands.
Make sure that the tool fits the person doing the task as much as possible so that there is no additional or unreasonable hand fatigue involved in holding and using the tool. Also make sure that the material being cut or ground is well secured and this does not mean holding it with the other hand or putting your foot on it. Stabilise it and use a vice or clamp to hold it steady whilst working on it.

Other essential elements of using hand tools such as grinders is eye protection to prevent small metal fragments flying up into the eyes and hearing protection as the average noise level when grinding is significantly above the recommended level.

Welding is the other common element of work in the metal fabrication industry and involves the use of Oxy-Acetylene, Electric Arc, Mig or Tig welding processes.

Some of the key issues in welding are:
- Welding without any fume extraction and exposure to gases
- Welding in awkward postures
- Exposure to welding flash
- Noise

Welding gases can be quite toxic and the best possible solution is to work in an area where there is good artificial or natural ventilation. When welding on a bench the best solution is to have the area exhausted to remove the welding fumes.

If extraction is not possible the next best solutions is some form of breathing apparatus in the form either of a negative pressure respirator with a fume cartridge or a positive pressure hood that is combined with a welding mask.

Exposure to the welding arc can be deadly and can in some cases lead to either temporary loss of vision or in worst cases can lead to more long term and chronic eye problems, up to and including blindness. It is essential that when welding eye protection is worn.

When oxy welding or cutting a set of oxy goggles will be sufficient to provide adequate eye protection from the flame created at the hot cutting or welding tip. These must be coloured to reduce the risk of eye damage and must comply with the relevant Australian Standard.

When arc, mig or tig welding a full face mask must be worn that again complies with the relevant Australian Standard and which provides protection for the eyes and face from the bright welding arc that is created.


In addition to protecting the welder from the risk of exposure to the welding flash, nearby workers must also be protected and in most open workshops where welding takes place special welding curtains or screens are used to prevent direct exposure to the welding flash.
Plant and Equipment
Many of the pieces of plant and equipment used in metal fabrication are designed to bend or cut metal pieces and involve parts that can trap and shear hands and fingers that are placed inappropriately.

Plant and equipment that has the capacity to trap and amputate is generally fitted with guards that prevent access to the trap points. These guards can be in the form of:

- Fixed guards that cannot be removed
- Interlocked guards that interrupt the machine cycle if opened
- Physical barriers to prevent access
- Presence sensing systems

Fixed guards are usually fitted to equipment that does not have any requirement for access during the operation, maintenance or cleaning of the plant. On this basis all persons are prevented from accessing the dangerous part unless the machine is dismantled and non-operational.

Interlocked guards are fitted where access to various areas of the plant is required from time to time, but the guard is fitted with an interlock that is linked to the operating system of the machine. If the guard is opened for any reason the operating cycle of the machine is immediately ceased to render the plant safe whilst the guard is open. In most cases the opening of the guard also triggers a reset mechanism so that the guard must be closed and the machine reset by the operator before it can recommence operation.

Physical barriers are installed when the above types of guarding are not possible or appropriate. The guard prevents access and is usually fixed in such a manner that it provides some capacity for its removal for inspection and maintenance but can only be removed using special tools, thus meaning that the removal cannot be accidental or incidental to the operation of the machine.

Presence sensing systems usually involve the fitting of a light curtain or laser beam to a machine which if broken prevents the machine from operating from the start of the cycle or interrupts the cycle of the machine at the point of intervention. They are often used around CNC machines where cutting heads can operate independently or in sequence according to a predetermined pattern and the breaking of the beam isolates the cutting heads.
Culinary

Baking and Patisserie

Bakeries, especially large manufacturing facilities, are filled with potential dangers such as hot ovens, mixing machines, heavy trays and dough cutters. As a result, bakers have a higher rate of injuries and illnesses than the national average.

All mixing and cutting equipment must only be used with guards in place where they are fitted and guards must not, under any circumstances, be altered, disabled or interfered with. If a machine requires maintenance or is not working, short-circuiting the guard can have potentially catastrophic consequences.

Additional caution should be exercised when moving in and around and placing items into and taking them out of hot ovens. If you do suffer a burn, run the affected part of the body under cold water and seek first aid treatment.

Although their work is generally safe, bakers may endure back strains caused by lifting or moving heavy bags of flour or other products and moving trays of dough into the oven and taking baked goods out of the oven. Other common risks include cuts, scrapes, and burns. When lifting bagged products if possible use a two person lift or use some form of lifting device, when moving products around use a trolley rather than carry the bagged products.

Bakers can also sometimes encounter breathing issues from the flour dust that can result in occupational asthma from long term exposure. If you are an asthmatic or have some breathing issues then you should take appropriate precautions such as ensuring you have your asthma medication handy or wear a dust mask. In addition adequate ventilation should be provided where flour is used to ensure that airborne flour dust levels are kept under control.

Bakery floors can be slippery from either flour spilled on the floor or from seed oil such as sesame seeds. This can be particularly problematic where there are steps or other changes of level within the workplace. Always wear shoes that have a good tread and keep constantly vigilant for slippery floors and clean as you go as much as you can.

Butchery

The most obvious risks in butchery are those associated with knife injuries, use of bandsaws and mixers and grinders used in the making of minced meat and sausage products.

Knife injuries can occur as a result of a wide range of circumstances but the two most common are loss of concentration and using a blunt knife, where extra force is used. (See notes on storage and management of knives at the start of this section)

Remember to keep all knives sharp and to sharpen the knife on the steel on a regular basis, which may be many times per day. Always concentrate on what you are doing and make sure you do not allow yourself to become distracted.
Band saws are designed to cut through flesh and bone and can easily do this to if you are not paying attention. Make sure you know where your hands and fingers are in relation to the moving blade, keep your fingers tucked in and concentrate on what you are doing. Avoid talking to fellow workers or customers when operating the band saw.

When using mincers and mixers, keep fingers away from the in-feed chutes and trap points particularly around the feed screw. If the machine blocks up do not try and clear it without switching it off and unplugging it. When cleaning the machine it also must be switched off and unplugged.

Where mincers and mixers are fitted with safety guards, they must only be used with guards in place and guards must not, under any circumstances, be altered, disabled by passed or interfered with.

Commercial Cookery

Commercial kitchens can be very busy and very noisy work environments to work in and can often present a workplace that is high risk.

There are a number of aspects of working in a commercial kitchen that present specific risks and the most common of these risks are:

- Burn Injuries,
- Slip, Trip and Fall Injuries,
- Cuts and grazes,
- Manual Handling Injuries.

Common Issues Relating to the Culinary Workplace

Storage and management of knives

Among the most common injuries for people working in the culinary area are knife cuts. In many cases knife cuts come about as a result of the knife being blunt and the user exerting too much pressure on the knife and it slipping and cutting the user as a result.

Basic knife skills include:

- making sure that the knife is kept sharp and if necessary using a steel to hone the edge before each use;
- correct storage, use a knife block rather than keeping them loose in the drawer;
- good washing up techniques of not leaving knives in the bottom of the sink but washing each one separately and placing it on a drying rack or hand drying it at the time.

Many users see professional chefs use knives at great speed to chop and dice food and think that this looks easy. Remember most of the people you see have had many years of experience and have developed good skills before they developed the speed. Work on the same principle.

Knife injuries can be quite severe, more than just superficial it is common to see culinary workers cut arteries or tendons, resulting in long term and sometimes career ending injuries.
Burn Injuries
A kitchen environment is filled with hot pieces of equipment and products that can result in serious burns, including hot oil, chemical cleaners, steam and open flames.

Hot oil
Hot oil is a common cooking technique and in many environments large open top deep fryers will be a major kitchen cooking appliance. Hot oil presents a wide range of specific issues from major burns, with hot oil burns often being very severe. It is important to ensure that the area around the deep frying station is kept clear to prevent slips and falls into the fryer, as there have been a number of major injuries as a result of this risk, and when cleaning that the oil is allowed to cool before being emptied.

Many kitchens now have arrangements in place where the cooking oil is changed on a regular basis by an external contractor thus reducing this risk.

Another risk with hot oil is that if the frying basket that is being used is wet, the water can rapidly turn to steam and result in fat splashes onto the person putting the basket into the fryer.

Chemicals
Chemicals used for cleaning in kitchen environments are often caustic in nature which presents a very high risk of chemical burns if they come into contact with unprotected skin and breathing difficulties from the chemical vapours that are created.

Always make sure that the work area being cleaned is well ventilated, which might mean turning on the exhaust unit before cleaning to purge out any chemical vapours.

When using chemicals for cleaning always ensure that you are familiar with them and the precautions that should be followed. This can be easily ascertained by consulting the Safety Data Sheet that should be held for every chemical product used in the workplace.

Steam
Steam can result in very severe and very painful burns. Steam can escape from pots and pans during the cooking process or when food is being drained out in preparation for serving. Steam can also escape from dishwashers and in both cases can result in serious burns.

Whilst not usually as severe as hot oil burns, steam burns can be just as serious and in all cases are usually very painful.

Open flames
Open flames are used on charcoal grills to create a smoky flavour to the food being cooked. The open flame is an ignition source and can result in burns by direct contact with the flame or can result in kitchen fires either by setting fire to unattended fatty food or by directly igniting other material that may be in close proximity.

Slip, Trip and Fall Injuries
Oil, food and water spills in a commercial kitchen are inevitable and require constant cleaning to manage the potential exposure. However, even the act of cleaning to remove one hazard has the effect of creating another hazard that that is a wet floor.
Extreme care needs to be exercised when working in and around kitchens for slippery floors and the best way to do this, in addition to cleaning, is to keep a watch out for the risks. Move at a reasonable pace, but do not rush, make sure that your footwear is in good condition and has adequate grip on the sole, walk in short measured steps, keep an eye out for any trip and fall hazards such as equipment left on the floor or trailing cords to portable appliances.

Other trip and fall hazards can be created by uneven floors or floors where there is a change of level such as steps leading into cool rooms or pantries and anti-slip mats that have been moved out of position or where the corner has been rolled up creating a trip hazard.

### Cuts and Grazes

As already outlined, amongst the most common injury in any kitchen environment are cuts from knives and other sharp items used in food preparation and serving.

Knives need to be treated with extreme care and due respect and a small slip can result in major injury and time away from work.

Other sources of cuts and grazes can come from using food graters and slicers, both hand and electrically powered and one of the most dangerous is a meat slicer that is often found in a commercial kitchen.

### Manual Handling Injuries

As with most work, manual handling injuries in kitchen environments can occur as a result of a wide range of activities.

Many items in kitchens are very heavy, with pots and pans the most commonly handled. Soup and stock pots of up to 20lt capacity can weigh up to 20kg and can be very difficult to carry and move around the kitchen.

Depending on the type of pan being used, heavy based cast iron pans can weigh up to 2-3kg, which when they are handled on an ongoing basis can result in hand and arm strains leading to long term problems, and this is without the weight of the contents of whatever is being cooked in the pan.

When working with and using pots and pans of any configuration, whether they are cast iron, stainless steel or aluminium make sure that you use both hands where possible and carry or lift them for the shortest time possible.

### Electrical Safety

There are a wide range of electrically powered pieces of equipment used in the culinary industry, any one of which can cause injury or death.

Every portable electrical appliance must be electrically tested and tagged on an annual basis and if it is not tagged it must not be used. This also includes chargers for battery powered units.
Hairdressing and Barbering

In the safety space we continuously hear about the effects of static working postures when using a laptop or computer has on your health. But how many of us have ever considered hairdressers as a profession that would suffer a huge amount of work related injuries?

Postural Stress

Hairdressing and Barbering always almost involves serving a client that is either sitting in a chair or reclined at a hair wash station. Both of these activities can result in postural stress, with the hairdresser/barber either sitting on a stool when the client is sitting or standing when the client is at the hair-wash station.

It is important in setting up for this work that the height of the chair is adjusted to the correct working height.

Adjust the stool so that you are sitting with your arms in a comfortable working position that puts you at the correct working height so that you are neither having to reach up or reach down to service the client. If you are working from a stool adjust the stool so that it places you at a comfortable working height. If you are standing adjust the chair so that you are not having to bend forward unnecessarily to reach the client.

Postural stress can also result in muscle fatigue, particularly where clients are being given treatments for prolonged periods.

Sharps and Body Fluids

The most common sharp to be used in the Hairdressing and barbering industry is a pair of scissors, and just as they are designed to cut hair they can quite easily cut and nick the skin, either of the clients or the hairdresser/barber. Scissors are designed to be multiple use items and must be treated with a sterilising agent between customers. The same sterilising treatment regime should also be followed with combs to avoid potential for infection between customers.

From time to time it will be necessary for the hairdresser/barber to use a sharp such as a razor or blade for shaving hair off the skin. These items are designed to be a single use item and should be disposed into a sharps container following use.

It is essential that when this occurs strict safety protocols are followed in ensuring that you use sterile gloves. Gloves and any swabs used to mop up blood or any other body fluids must be also disposed of into a contaminated waste container along with the gloves.

The following information about some of the WHS risks associated with the hairdressing industry may help protect you from these risks.
A recent study showed 71% of hairdressers reported having pain currently and that nearly every part of the body is put at risk of injury from being a hairdresser. Hairdresser’s who work with their arms and elbow in an elevated postures are at risk for musculoskeletal disorders especially in the neck and shoulders just like everyone else. In-addition the constant standing and bending over can contribute to pain in your low back and knees as well.

Common Issues Relating to the Hairdressing/Barbering Workplace

Static Postures Cause Muscle & Joint Pain

Working with the upper arms elevated is considered a risk factor for neck and shoulder pain symptoms, as well as for rotator cuff tendonitis (van der Windt et al., 2000; Miranda et al., 2001;).

You may also find yourself suffering from headaches and migraines due to muscle tightness and imbalances in the neck and upper back.

**Recommended:** Raise or lower your client so that you can maintain arms in and close to your body.
When shampooing your clients hair, bending over is a typical cause of low back pain.

**Recommended:** Spread your feet apart and bend at the knees while keeping your back straight. Learn how to hip hinge properly this will ease some stress on your low back musculature, stretch your hamstrings if they are tight and strengthen your glutes.

![Posture not recommended](image)

Standing on a hard floor for long periods puts considerable stress through your feet, knees and your lower back muscles. Your knee, ankle and hip joints may feel achy and stiff. Your joints need adequate movement to get fluid into the joint capsule and when you stand for prolonged periods of time in one place this is not happening.

**Recommended:** Footwear is a factor which, if properly chosen may further reduce harmful effects of prolonged standing. There is no doubt choice of footwear is an important consideration for people who work on their feet. Shoes should ensure adequate arch and heel support and cushioning while providing comfort to the wearer. It’s recommended that you wear comfortable full foot covering shoes. Take frequent breaks to walk around and stretch.

**Chemical Safety**

In hairdressing there are a number of chemical products that you will come into contact with throughout the normal course of your work.

These include:
- Shampoos
- Conditioners
- Colour remover (e.g. Peroxide)
- Chemical straighteners and smoothers
- Hair Colours

Many of these may appear to be fairly harmless but all have the potential to create skin irritation issues up to and including minor rashes and at the extreme end contact dermatitis.

All chemical must be treated with caution and handled with care. They must be used, handled and stored in accordance with the specific guidance contained in the products safety information of the Safety Data Sheet.
The use of some chemicals can result in the release of chemical fumes that can be pungent and cause eye irritation or breathing difficulties in some susceptible people. Always use chemicals in a well ventilated area and ensure that if there are exhaust fans available that they are used when chemicals are being used.

Some chemical products need to be specially stored and this should be arranged so that whilst chemicals are available and accessible they are correctly stored in an area where they will not cause any further safety issues.

**Personal Protective Equipment (PPE)**

Basic chemical safety precautions indicate that all chemicals should be handled using appropriate PPE such as gloves and when mixing colour preparations both gloves and safety glasses should be used.

**Salon Safety**

In running their salon, hairdressers and barbers should:

- ensure mandatory cleanliness of area
- ensure appropriate access for the elderly and people with a disability
- provide suitable lighting and ventilation and ensure the salon area is maintained at a comfortable temperature
- maintain and service heating and ventilation systems/devices, and turn off when not in use
- wash hands before and after each client
- use disposable or freshly washed covers for each client
- maintain hand washing facilities with temperature control on hot tap
- carry out standard infection control procedures on reusable items (scissors and combs etc.)
- carry out regular safety checks on all equipment including electrical equipment
- use ergonomic stools and supports that comply with relevant Australian standards
- keep all chemicals in contamination proof containers, clearly labelled
- obtain safety data sheets (SDS) on all products used
- check to make sure that clients are not sensitive or allergic to products used
- provide closed containers for used linen
- be aware that drying linen in a dryer may pose a potential fire hazard due to the presence of any residual oil, ensure correct storage and transport of potentially hazardous waste (contaminated linen, used hand towels, tissues)
- provide non-slip or slip-proof flooring
- keep area free of obstacles for client access and assessment
Electrical Safety
There are a wide range of electrically powered pieces of equipment used in the hairdressing/barbering industry, any one of which can cause injury or death.

Every electrical appliance must be electrically tested and tagged on an annual basis and if it is not tagged it must not be used. This also includes charging units for battery powered units. All electrical cords or portable equipment should be inspected for damage (e.g. cuts in insulation exposing wires) by the operator prior to use.

If you are working in the hairdressing/barbering industry you should not take your own equipment into a salon unless it has been tested and tagged.

Client Behaviour
It is reasonable to expect clients to behave in a reasonable and polite manner, and this goes to the way they treat other people and to the language that they use.

If a client behaves in an impolite manner, is abusive or uses abusive, derogatory or foul language within the salon and will not stop when asked, it is acceptable to ask the client to leave the salon, for your own and the protection of others in the salon.

Staying Healthy For Your Customers
The hairdressing/barbering culture is just like any other service-based industry, it’s a “customer focused” workplace and environment. In continuing your career in the industry long term it’s important to implement correct WHS practices and maintain a healthy work/life balance.

Keep the blades sharp on your scissors to minimise the force needed to cut hair can save your hands from tendonitis and other overuse injuries of the thumb or forearm muscles. We know that this may seem a minor detail, but you must consider the millions of cuts you make each and every day! Consider getting a regular massage to reduce tension from building up in the muscles and joint of your hands.
Emotionally hairdressers/barbers often find themselves in the role of counsellor and confidant and must deal with a wide range of clients throughout a typical workday. This can lead to hairdressers/barbers not only experiencing their own emotional stresses but take on the emotional stresses of their clients as well.

This stress has the potential to lead to depression, tiredness, anxiety and difficulty sleeping. Be sure to ground yourself with other activities such as, mediation, yoga and breathing techniques.

Don’t fall victim to this; “A lack of knowledge about the hazards of hairdressing/barbering work has been identified as a contributor to work related musculoskeletal injuries” (Gisle & Nelson, 2008).

Horticulture

Horticulture can involve the use of a wide variety of tools and equipment that can present a wide range of risks and potential for serious injury or illness.

Machinery

Using equipment, such as skid steer loaders and excavators is just as dangerous in the horticulture industry as it is in the general construction or civil construction industry.

Users of these types of equipment need to be able to demonstrate that they are competent to operate these pieces of plant and then use them in a way that is consistent with the manufacturer’s recommendations/guidelines and in accordance with site specific WHS arrangements such as those outlined in an SOP or SWMS.

Remember that using any mobile plant where other people are working is a high risk construction activity and must be consistent with and in accordance with the development of a Safe Work Method Statement (SWMS) for the task being performed.

Other plant that is often used in the horticulture industry mixers (either electric or powered) present issues in relation to electrical safety, usually from a builders supply if one is available on site or from the
use of a petrol or diesel powered mixer. The latter mentioned equipment then raises the issue of the handling of combustible or flammable fuels on site and their storage in vehicles which is another issue of concern.

A common and highly risky piece of equipment that is often used in Horticulture and landscaping is a brick saw. This equipment is usually electrically powered and has a water supply to the blade, which spins at very high speed. The brick is often held by hand on the carriage and can be easily ejected in the direction of the operator if the blade jams or grabs during the cut.

**Equipment**

A wide range of smaller equipment is used in the horticulture industry, ranging from chain saws, jack hammers, picks and shovels to smaller tools such as those used in normal carpentry are all encountered in the field and all present various risk of injury or illness.

**Chemicals**

Pesticides, herbicides, plant foods, mulch, bagged products such as potting mixes.

All of these products need to be treated with the appropriate level of precaution in both handling and storage.

All chemical products need to be handled and stored in accordance with the details and information contained in the relevant Safety Data Sheet, which means using the right type of PPE for handling, mixing, storage and application. Standard precautions will usually include wearing of eye protection, hand protection, overalls and storage in specific containers and/or areas designed for the particular substance.

**Floristry**

Workplace safety is the responsibility of everyone, it is simply the obligation to make an environment safe and not to ignore a hazard or problem that you have noticed whether it will affect you, other workers or customers.

If you work in the industry:
- take care of the health and safety of workers and customers
- co-operate with your employer to comply with work, health and safety requirements
- health and safety issues identified are either rectified by the worker or the employer is notified of the issue
If you own and/or operate a florist:-
- create a work place environment that complies with work, health and safety requirements
- supply information, training and procedures that guide workers for safe and healthy working conditions
- react to health and safety issues identified by the workers
- supply tools and equipment required to handle health and safety issues
- provide safe storage areas and clear labelling for substances used in the work environment
- create a customer area that is safe and healthy.

**Common issues relating to the florist workplace**

The following work, health and safety issues have been identified in relation to the operational requirements of a florist.

**Scissors, Secateurs and Knives**

These are the tools of the trade for a florist and present various health and safety issues. They are sharp and can inflict a serious cuts or stabbing injury and can create strained or damaged hands (e.g., wrist and or repetitive strain injury).

These tools are to be:
- treated with care and respect and kept in an uncluttered environment to minimize the risk of an accident or injury;
- not carried in clothing or pockets unless held by a specifically designed carrier like a tool belt;
- used with training in the use of each tool and capabilities to reduce the strain on hands and the risk of an accident or injury; and
- sharpened, cleaned and/or replaced regularly to reduce the chance of an accident, reduce the strain on the hands and lower the chance of infection should a cut or injury occur. Tools are to be cleaned daily with methylated spirits and a cloth.

**Cool Rooms**

Cool rooms are a major concern for the wellbeing of workers, being trapped in a cool room at 4oC can be a very troubling and dangerous experience. To avoid this we must make sure the cool room:
- is fitted with a bell that can be rung from inside and can be heard clearly from the outside;
- is fitted with an inside handle that can open the door;
- is fitted with a door operation that is reliable and easy to use
- checked to ensure that there are no latches on the door that can lock or hold closed the cool room door; and
- has no materials, stock or equipment stored close to the door that may obstruct the door operation.
**Floor Mats and Footwear**
A worker should stand on an anti-fatigue floor mat (rubber and/or carpet) this will insulate the worker from cold floors and provide additional cushioning to their feet and lower limbs. Florists spend the majority of the day standing in one spot; this can cause tiredness and present a problem after many years of prolonged standing. Ensure the mats supplied lay flat on the floor and do not create a trip hazard (e.g. outer edge folded up).

Footwear is a factor which, if properly chosen, may further reduce the harmful effects of prolonged standing. There is no doubt that the choice of footwear is an important consideration for people who work on their feet. Shoes should ensure adequate arch and heel support and cushioning while providing comfort to the wearer.

**Handling flowers and plant material**
Flowers coming from the supplier often arrive in large heavy boxes that must be lifted and carried into the work room, if the courier does not deliver beyond the front door.

As many florists work alone, large boxes may be problematic when there is no one else available who can provide assistance to lift them. If handling large boxes use suitable trollies to move the boxes into the work room and then unpack the contents onto the work bench.

Another potential risk is in the handling of flowers and plant material due to possible contamination from any residual pesticides that could have been sprayed on the flowers prior to shipping.

You may not know if the flowers have been sprayed or not, so you need to be extra cautious. Wear gloves to avoid skin contact and absorption through the hands and if you suffer any form of respiratory problems consider wearing at least a dust mask (P2) to reduce the level of risk associated with breathing in pesticide fumes.

Also when handling products be aware that many plants have sharp thorns that can cause scratch or puncture wounds and that some plants have fine stinging like nettles that can cause major skin irritation.

**Cleaning of Workplace, Storage Areas and Equipment**
Cleaning is an important part of work health and safety, it reduces the risk of accidents involving workers and customers tripping or slipping, it reduces the chance of allergies for workers exposed to an area for long periods of time and the actual processes involved in cleaning issues relating to WHS.

The following cleaning task and the issues involved with each process:

**Using bleach and water solution** – this solution should always be mixed in a well ventilated area or outside, never take the bleach concentrate into confined spaces like a cool room, wear safety glasses and gloves at all times when using bleach.(Using 4% chlorine Bleach use 5ml per 4 litre of water)

**Floors** – floristry creates a lot of waste debris which if allowed to build creates a trip/slip hazard. Work area waste such as, greenery, stems and general rubbish should be removed frequently, water spills broken pots and broken glass should be cleaned immediately and customer areas should always be kept clean. Vacuuming and mopping will decrease the dust and lower the effect of allergies.
Display – storage shelves and benches - must be wiped down regularly to remove dust and lower the effect of allergies. Work benches should be cleaned with a solution of bleach and water. (see section above using a bleach solution)

Cool room – must be swept and cleaned regularly removing any waste plant materials to avoid workers slipping and need to be washed (floor and walls) regularly with a mix of bleach and water to remove bacteria and fungi. (see section above Using a Bleach Solution).

Buckets and containers – flower buckets and containers must be washed regularly with a mix of bleach and water to remove bacteria and fungi. (see section above using a bleach solution).

Product and Equipment Handling

Product and equipment handling is relating to the storage and lifting of heavy products like large arrangements, water buckets and containers. Any unmanaged risks in this area can result in serious manual handling injuries that can be long term and major and may impact on work capability in the long term.

The following guidelines should be followed:-
- only fill buckets and containers to a level that adds an acceptable weight (no more than 12kg) to be lifted or carried;
- if an object is reasonably heavy, store and place it at a low or waist high level to allow easy access (recommended between knee and chest height); and
- follow guidelines and training on lifting heavy objects including the using your legs to lift with a straight back, carry it close to you not at arm’s length and always lift the object completely before turning.

Additional information regarding manual handling can be found at: [http://sharedservices/ACTGovt/WHS/SafetyMgt/RiskManagement/Manual.htm](http://sharedservices/ACTGovt/WHS/SafetyMgt/RiskManagement/Manual.htm)
Construction – Trade

Bricklaying

Bricklaying is hard physical work involving a lot of both dynamic and static muscle movement and a significant amount of postural stress associated with bending and stretching.

Bricklaying involves significant risks associated with working at height either off a trestle or a scaffold, fixed or mobile.

The following specific risks have been identified with bricklaying in which bricklayers need to be mindful of:

- erecting work platform
- moving bricks and blocks to work face
- mixing mortar and moving to work face
- cutting bricks and blocks
- laying bricks and blocks.

Erecting Work Platform

Depending on the site and the site arrangements this can involve the setting up of a working deck on a trestle (which historically was often substituted by 44 gallon drums) for a single level dwelling to allow bricks to be laid to the roof line.

In a multi-storey dwelling this will usually involve the erection of a perimeter scaffold consisting of steps, working platforms and hop ups. These types of scaffolds must be erected and certified by a competent and ticketed scaffolder and as a brick layer you should check to see that the scaffold has been properly signed off.

If internal brick and block walls are being constructed and the floor has already been laid, the working platform may be in the form of a mobile scaffold, which if it is below 4m does not require a ticketed scaffolder to construct, but can be put together following the manufacturer’s instructions. However, irrespective of how the mobile platform has been constructed and who by, you should always check to make sure that the wheel brakes work and that you can lock the scaffold into position before you use it.

As with any form of working platform at heights the greatest risk is getting on and off as it is at these points when there is the greatest potential for falls to occur.

When climbing on or off, ensure that like using a ladder you maintain 3 points of contact as far as possible.

When using the working platform always be conscious of where you are in relation to the inside edge of the platform, (the edge closest to the working wall), particularly when you are working around voids such as window openings, and especially when using a working deck on a trestle as these will not have handrails and kickboards like a scaffold does.
Also when using any type of raised working deck ensure that you do not overload the deck. Remember that every deck has a weight limit and you have to take into account your weight, the weight of your offside (if you are working in pairs), the weight of the bricks or blocks and the weight of the mortar and ensure that this does not exceed the strength of the deck.

With any scaffold, mobile or fixed, you will be given the weight limit that it is rated for, but for a trestle working deck this may not be as evident.

**Moving Bricks and Blocks to Work Face**

This is one of the most arduous elements of brick laying as it involves bringing bricks or blocks to the work face in sufficient numbers so that when laying them there are not too many interruptions which can affect the usability of the mortar if it starts to dry out.

Bricks can be carried using a brick carrier, which in most cases will carry up to six standard house bricks weighing approximately 20kg, or they can be handled individually if the brick packs are unloaded in close enough proximity to where the work is to be carried out. In this latter case bricks can often be thrown up to a second person standing on the working deck or can be placed and stacked so that they can be used from the working deck.

Handling of blocks is done in a similar fashion but because of the weights may need to be handled singly or in a maximum of two blocks at a time.

Where a lift is used then the bricks should be loaded into a wheelbarrow or onto a trolley and moved to the correct level and then wheeled to the work face.

**Mixing Mortar and Moving to Work Face**

Depending on the type of brick or block being laid the mixing ratios of the mortar may vary, but in most cases will consist of Cement, Lime and Sand plus other additives such as Bycol and a colouring agent where tinted mortar is being used.

The mixing ratios should be determined before you start the job and kept consistent throughout the whole building process.

Mixing the cement is usually done using a cement mixer (either petrol or electric powered) and the mixer needs to be set up so that it is stable and you can easily tip the mixing barrel into the wheelbarrow or bucket.

The mixer also needs to be positioned in easy relationship to the raw materials, so close to the sand heap and where you can get the bagged products (cement and lime) close to it for easy access.

Shovelling the material into the cement mixer is physically arduous and making sure that you are fit, well rested and well hydrated will help. Position yourself so that the greatest amount of the material handling can be done with the least amount of effort, so taking the sand from the heap and being able to load it into the mixer with minimal manual effort is the best option. Try to avoid bending and twisting where possible as this will increase the wear and tear on your lower back and shoulders and use your feet to move as a better option.
When using bagged products, be conscious of the wind direction so that the fine powder does not blow into your face, if that is possible, if it is not consider wearing PPE such as a face mask and safety glasses.

When tipping the mortar into the wheel barrow or bucket, tip the mixer barrel over using both hands to steady the handles on the mixer and avoid spilling the mortar on the ground or splashing it onto your skin or up into your face.

When wheeling the wheel barrow to the location where the bricks or blocks are being laid, check beforehand for any obstacles such as broken bricks or other building material that has been dropped and which might cause you to lose control of the wheel barrow. If you need to, do some general site clean-up before you start and throughout the day to eliminate any obstacles from the path that you need to take. The same rules apply if you are moving mortar by bucket.

When wheeling the wheel barrow, make sure you are well balanced so the load is evenly distributed through your arms and shoulders and that you use the strength of your legs to take most of the load.

When carrying mortar in a bucket, try to balance yourself by extending the arm that is not carrying the bucket to offset the weight of the bucket full of mortar.

When you get to the workface the mortar will need to be shovelled from the wheel barrow on to the mortar board, unless the height of the working deck is not reachable from ground level which means that it may need to be bucketed up to the working deck height or if a lift is used carried to the working height in the lift and then wheeled to the work area before being loaded onto the mortar board.

**Cutting bricks and blocks**

The cutting of bricks and blocks is usually done by way of a diamond blade brick saw that is usually driven by a petrol or small diesel motor. Bricks and blocks can also be broken and shaped using a trowel or a hammer and bolster chisel.

The issues that arise from a WHS perspective in cutting bricks and blocks by hand using a trowel or hammer and chisel are primarily around either chips flying off and striking you in the face or hitting your hand with either the hammer or the trowel.

When hand cutting bricks with a hammer and chisel, it is best to place the brick on a bed of sand and use a chisel with a rubber safety collar to limit the risk of striking your hand with the hammer.

When cutting bricks with a trowel, make sure you keep the hand holding the brick as far away from the strike point of the trowel as is possible, otherwise consider placing the brick on the ground as you would for cutting using the hammer and chisel.

When cutting bricks or blocks with a brick saw there are a whole range of risks associated with the process.

As the brick saw requires a water supply to cut effectively there is a risk that the ground surrounding the saw may become wet and slippery and result in you slipping and falling.

The use of the brick saw is very noisy with average noise levels in excess of 100dBA, which requires the wearing of hearing protection at all times when the saw is operational. This hearing protection should meet relevant Australian Standard AS/NZS 269.3:2005 Occupational Noise Management.
The saw creates both a slurry of brick particles and water which can splash into your eyes as well as creating dust and particulates of brick that you can strike your eyes resulting in eye injuries. When using the brick saw always wear eye protection with side shields.

**Laying bricks and blocks**

The laying of bricks and blocks is physically demanding as you are bending and stretching all the time as well as having to lift the bricks and blocks (weighing between 4 and 14kg) from deck level to working height level.

This may also involve working on scaffold working the main deck or off hop-ups, which as already outlined involves getting the material to the deck.

Laying bricks requires a level of physical dexterity in placing the mortar onto the line of bricks or blocks below the one being work on, then adding mortar to the end of the brick or block being laid, placing the brick or block into position, noting that blocks may be a two handed job, depending on size, weight or the awkwardness of the positioning required.

Whilst bricks are a bit easier to work with than blocks working with them adds to the overall manual handling issue in that you need to lay more bricks than blocks to build the same size wall, so more individual bends and stretches are involved.

Hands can become very dry when bricklaying because of the drying nature of the bricks and blocks, scratched and covered in abrasions, again because of the rough nature of the brick or block edges and bricklayers hands can often suffer contact dermatitis from the chromate that is in the mortar mix.

Many bricklayers wear gloves but some tradesmen find that they make it difficult working around the stringline without knocking it out of position. If you choose not to wear gloves, make sure you use a good barrier and moisturising cream on a regular basis throughout the day to help protect the skin on your hands.

**Cabinet Making**

Cabinetmaking is one of the trades that primarily takes place within the relatively controlled environment of an established and set up workshop.

Given this, the safety risks are a bit more easily identified and controlled and primarily surround the interaction between the cabinetmaker and the tools that they use and the materials that they use those tools to work on.

Fundamentally, the WHS risks associated with cabinetmaking could be classified as follows:

- Use of tools and equipment
- Workplace Environment
- Manual and Material Handling
- Noise and Dust management
Cabinetmakers use a wide range of tools and equipment that they use in cabinetmaking, including:

- Band Saw
- Circular Saw
- Docking Saw
- Jig Saw
- Rip Saw
- Table Saw
- Spindle Moulder
- Staple Gun
- Table Planer
- Thicknesser
- Wide Belt Sander

Each of these has its own particular safety characteristics, but as they are all designed to cut or change the shape and surface of the timber they can just as easily do that to any hands or fingers that come into contact with the cutting heads.

Generally, each piece of equipment should have a Safe Operating Procedure (SOP) and you should be trained, competent and authorised to use the equipment before operating it and then only operate it in accordance with the SOP.

If there is no SOP, or you have not been trained or are not authorised to use the equipment then you should leave it alone.

Particular attention needs to be given to ensuring that appropriate Personal Protective Equipment (PPE) is worn at all times. For cabinetmakers this will usually involve, safety glasses, hearing protection, dust mask, safety footwear and sturdy and well-designed clothing, in the form of overalls or at least long pants and long sleeve shirts.

It can also involve wearing gloves in certain circumstances when moving rough sawn timber or timber with sharp edges, but DO NOT wear gloves when using any type of saw, drill or milling equipment as they can become entangled and drag your hand or fingers into the cutting head.

A cabinetmaking workshop can have a very cramped and crowded workplace environment if careful planning and organisation is not applied when working out the layout of the equipment.

Machines need to be placed so that there is enough room around them for the movement of material generally, but also so that as material is fed into and feeds out of any machine that it has a clear path and does not interfere with any other machine or any other worker on another machine.

Sufficient room needs to be allowed for both the length and width of materials being worked on, which in some cases may be up to a full size sheet 2.4m by 1.2m.

In relation to management of noise and dust, this is dealt with further but there are serious considerations that must be given to the exposure to some dust such as MDF and some hardwoods that
can cause respiratory issues as well as potential carcinogenic issues and this needs to be dealt with by the fitting and operation of dust extraction to equipment as well as the use of appropriate PPE.

Manual and Material handling within a workshop can be problematic and as outlined above sufficient space within the workshop is essential to limit the risks of this.

Manual handling injuries account for about 40% of all workers compensation claims and getting it right is essential. Getting it wrong can mean a lifetime of pain and limitations.

Individual sheets of product such as MDF or laminated particle board in full sheet configurations weigh up to 25-30kg. At these weights, particularly given the size of the sheets their handling within the workshop needs to be a two person or mechanically assisted lift. This can be using an offside or using some form of mechanical assistance such as a forklift or a vacuum lifter.

As items are constructed, the risks associated with manual and material handling are magnified by the increasing size and bulk of the item which make in difficult to grasp and lift. Again use assistance with lifting using a two person lift or some form of lifting aid.

Finally noise and dust management are key issues in any cabinetmaking enterprise. Almost every powered tool that a cabinetmaker uses will create potentially damaging noise levels that can result in noise induced hearing loss over the long term, unless appropriate protection is used.

Noise levels above 85dBa, can result in noise induced hearing loss. Any noise above this level must be mitigated by the provision of and wearing of hearing protection in the form of ear muffs or ear plugs.

Noise can be mitigated further by making sure that equipment is regularly serviced so that it is operating efficiently and effectively and ensuring that all guards are in place.

Hearing protection should meet the relevant Australian Standard AS/NZS 269.3:2005 Occupational Noise Management, and muffs and plugs provided should be marked as meeting this standard, and where the noise level is assessed as being above the stated limit, the provision and wearing of hearing protection is mandatory as a legislative requirement.

Dust management can be mitigated by way of extraction equipment that is fitted to all dust creating tools, but over and above this there is a need to examine the need for and implementation of the use of dust control in the form of dust masks.

Many hardwoods are carcinogenic (cancer causing) such as oak, mahogany, beech, walnut, birch, elm and ash and need to be treated with considerable caution when working with them.

Even in well managed workshops it is important to remember that at the end of the day with clean-up this should be done with a vacuum cleaner rather than a broom to avoid stirring up dust on the floor and other surfaces should be wiped down with a damp or oiled cloth to also to prevent stirring up dust into the atmosphere.

The information above has been based on material drawn from a number of sources, including the NSW WorkCover (now SafeWork NSW) publication ‘Safety in the Wood Products Industry’ and the US Occupational Safety and Health Administration (OSHA) Woodworking eTool as well as general observations within the Cabinetmaking workshop of Canberra Institute of Technology.
Carpentry

The following advice is based on a document titled ‘Health and Safety Advice for Carpenters and Joiners’ produced by the Construction Industry Training Board of Northern Ireland.

They have identified that the primary risks in carpentry, given the often flexible environment that it takes place in, include:

- Falls from height including working on fragile roofs
- Risk of eye injury and dust
- Moulds, dermatitis and exposure to asbestos
- Slips trips and falls
- Cuts and abrasions
- Manual handling and repetitive tasks
- Using various types of machinery and tools
- Flammable or combustible materials
- Exposure to noise
- Struck by falling objects

Working at heights

Working at heights occurs every time a carpenter has to climb a ladder, step onto a trestle, or use a scaffold.

Where there is a risk of falling more than 2.0m this, like similar activities throughout construction will trigger the High Risk Construction activity provisions under Regulation 291a and will require the development and implementation of a Safe Work Method Statement.

When working off ladders carpenters need to ensure that they have set the ladder up so that it is stable, that the legs are fully extended and they have positioned it to ensure that they do not have to over reach. Ideally three points of contact should be maintained but this can be problematic when using any form of tool in one hand with the other hand stabilising the work piece.

When working on roofs, even single storey roofs, it is essential that some form of fall protection is used to prevent falls off the edge. This can take a variety of forms, including perimeter scaffolding, edge fall protection or harness and lanyard attached to a certified anchor point or an approved temporary anchor point. The other aspect of roof safety that has to be taken into account is that soundness of the roof surface and the underlying roof structure.

If the roof is on an older house, the tiles may be brittle, or the sheeting may be rusted. If there are skylights installed in the roof these are an obvious fall hazard and they and the surrounding area must be avoided at all costs.

Weather conditions must also be taken into account when contemplating the conduct of roof work. In winter, early morning should be avoided from the perspective of their being frost or heavy dew on the surface making it extra slippery.
If the weather is windy, roof work should also be avoided as the wind can easily blow a roof worker off balance.

In summer, care needs to be taken if roof work is contemplated during the hottest part of the day 10am to 3pm, particularly if the roof surface is metal as this will add reflected heat to the level of ambient heat encountered.

**Eye Injuries**

Eye injuries from debris falling from roof or upper wall levels can result in issues ranging from minor irritation to major eye damage if the eyeball is scratched, particularly if you rub your eye with a dirty hand in the process of trying to remove the debris.

When working on ceilings, or on upper walls it is recommended that eye protection is worn to reduce the risk of eye injuries from falling debris.

When working on renovating older buildings the additional risk of falling debris can be created by this being dislodged so additional care needs to be exercised in ensuring eye protection is worn.

**Dust, Moulds and Asbestos**

Dust, Moulds and Asbestos is another area of concern for carpenters. Dust is created particularly when cutting or finishing material using a saw or planer.

When cutting hardwood it is recommended that a dust mask is used to prevent breathing the dust particles created.

Mould can cause chronic respiratory difficulties if it is encountered and extreme care needs to be exercised if any work is done in areas that do or are likely to contain mould.

When removing old material consideration must be given to the potential for there to be mould behind the material, particularly if there has been moisture build-up behind the sheeting. If this is likely, gloves, eye protection and breathing protections (rated dust mask) should be worn to prevent any contamination.

**Asbestos**

Asbestos automatically triggers the provisions of *High Risk Construction* activity under *Regulation 291d*, and requires the preparation of a Safe Work Method Statement. It also triggers requirements that it must be assessed and removed by a suitably competent and registered asbestos assessor and removalist.

Asbestos should be left alone if it is encountered and a comprehensive Asbestos Management Plan arrangement needs to be introduced.

**Dermatitis**

Dermatitis is the inflammation of the skin, and in carpenters this is usually on the hands. Dermatitis is caused by the intermittent or ongoing exposure to chemical irritants, which dust, glues and adhesives.
The best way to prevent or limit the risk of dermatitis is to use either barrier creams or use gloves and when hand washing use an alcohol based hand sanitisers containing moisturisers rather than soap to reduce Dermatitis symptoms.

**Cuts, abrasions, etc.**

Carpenters routinely use saws, chisels and hammers, for preparation and installation of types of wooden structures such as wall frames and roof trusses. All of these can result in carpenters suffering cuts and abrasions, to the hands and fingers, which can range from being annoying (if it is a scratch or scrape) to being life threatening if say a chisel cuts an artery or vein in the hand or arm.

Extreme care needs to be exercised when using these types of equipment. As with any tool, a dull chisel is more dangerous than a sharp one so when using a chisel make sure that the blade is sharp.

With other tools likely to inflict cuts and abrasions, care needs to be exercised to ensure that they are kept in good condition and that handles are sound so that they are less likely to slip.

**Slips, Trips and Falls**

Slips, trips and falls are the most common type of injury causing accident in the construction sector and most often are the result of poor housekeeping. Making sure that the workplace is kept tidy is important in limiting the amount of risks associated with trip and fall hazards and remember that it is not just inside the workplace but also getting into and out of the workplace that needs to be kept tidy.

Make sure that you clean as you go and put offcuts into a bin or other rubbish receptacle. On most commercial sites and many residential sites the builder in charge will arrange rubbish or waste management, but on smaller sites or if you are working as a solo tradesperson, you may have to arrange this yourself.

One of the easiest way of dealing with smaller offcuts is to use a plastic garbage can, with longer offcuts stacked safely against a wall and preferably out of a walkway.

Remember the person who is most likely to trip over your rubbish is you.

**Manual Handling**

The movement of items into and within any work zone can involve the risk of manual handling injuries. When moving ladders, make sure that you do not exceed your comfortable lifting limit. If moving long ladders, use a two person lift. When moving lengths of timber or sheets of material ensure that you lift within your capacity or get someone to give you a hand.

Moving in and setting up a portable drop saw unit can involve lifting and carrying upwards of 25kg and in doing so make sure that you use the carry handle and have a firm grip.

When moving items for installation around, such as doors, cupboards, benchtops and the like these can also be both heavy and awkward and the shape and amount of space that you have can limit your capacity to lift and carry within increasing the level of risk associated with the lift.
When performing repetitive tasks, like screwing a cupboard together, as far as possible try to use a tool such as a drill driver, rather than doing it by hand, but if hand assembly is required, make sure you take regular breaks.

**Flammable or combustible components**

Many building products contain flammable or combustible components that can if exposed to an ignition source can catch fire or explode.

Just like any business that works with or has workers who work with chemicals, they must be handled in accordance with the requirements of the legislation and regulation and using guidance contained in relevant Safety Data Sheets (SDS).

Many glues are highly astringent and can cause eye irritation or breathing problems if exposed. When using any glues make sure they are used in a well ventilated area.

When transporting goods in your van make sure they are separated and stored in a leak-proof container so that the contents do not spill if they tip over.

When mixing glues, such as two part epoxy, it is best to do so outside, or at least in a well ventilated space inside, to prevent the build-up of fumes.

**Noise induced hearing**

Using any form of mechanical process for cutting timber, or using Explosive Power Tools (EPT) will invariably expose the carpenter to the risk of noise induced hearing loss. This occurs when the worker is exposed to noise levels higher than 85 DbA for prolonged periods or higher levels for shorter periods.

Whenever using any type of mechanical cutting process, hearing protection is a must for all tilers.

**Struck by falling objects**

The final risk for carpenters is when they are working in areas where there are other trades working, who might be working above the level of the carpenter. Under these circumstances there is a risk of the carpenter being struck by falling objects.

This can also happen when material or tools are left on the top of a step ladder or platform ladder and when dislodged fall to the ground with the risk of striking someone working below.

When working in situations where other workers are working above the one that the carpenter is working on it is essential that the carpenter wears a hard hat to prevent injury. On commercial construction sites this will usually be mandatory in all cases but on smaller sites it will less vigilantly pursued and may well be up to the carpenter to make a judgement call on. It is recommended that where you are working below the level of other workers that a hard hat should be worn at all times.

The above information is based on the publication ‘Health and Safety Advice for Carpenters and joiners’ produced by the Northern Ireland Construction Industry Training Board.
Glass and Glazing

Each year there are a number of injuries involving people working in the glass and glazing industry. SafeWork NSW advice is that the following are key areas where injuries can occur:

- loading and unloading glass from shipping containers;
- loading and unloading vehicles or timber packaging, where glass may have moved during transport;
- being hit by falling glass due to unsafe lifting techniques, both manual and mechanical;
- not using appropriate PPE;
- moving, handling and storing glass sheets

SafeWork NSW recommend the following actions be undertaken to minimise the risk of injury in order to stay safe when storing and handling glass sheets:

- never restrain large sheets of glass by hand, keep them securely fastened;
- use the correct mechanical lifting aids, such as mechanically or manually activated suction lifters;
- keep the work area tidy to minimise the risk of trip and fall accidents;
- have a detailed lifting plan for both mechanical and manual multi-person lifts;
- stand clear of glass sheets when moving them;
- use a suitable trolley or A frame to move sheets around, where possible;
- never take sheets from the middle of the rack or stack; and
- always wear appropriate PPE, such as cut resistant arm guards and consider throat and groin protection to reduce the risk of cutting major arteries

Plastering

Plastering is one of the tasks in the construction industry that is largely performed by hand with some minor exceptions where sheet lifters and electric or batter powered screw guns are used.

The major risks as outlined in the publication ‘Health and Safety Advice for Plasterers’ produced by the Northern Ireland Construction Industry Training Board include, but are not limited to:

- Working at and falls from height
- Eye Injuries
- Dust and Moulds
- Asbestos
- Dermatitis
- Cuts and abrasions
- Falling Objects
- Slips, trips and falls
Working at heights

Working at heights occurs every time a plasterer has to climb a ladder, step onto a trestle, or use a scaffold.

Where there is a risk of falling more than 2.0m this, like similar activities throughout construction will trigger the **High Risk Construction** activity provisions under **Regulation 291a** and will require the development and implementation of a Safe Work Method Statement.

When working off ladders plasterers need to ensure that they have set the ladder up so that it is stable, that the legs are fully extended and they have positioned it to ensure that they do not have to over reach. Ideally three points of contact should be maintained but this can be problematic when using a screw gun in one hand with the other hand stabilising the plaster sheet.

Some plasterers, particularly if they are working consistently on higher than standard 2.4m ceilings, will use plasterer’s stilts. These are exceptionally risky and require careful planning and organisation of the workplace to ensure that they are safe. Stilts can be particularly dangerous when they are used on upper floors where there are penetrations for stairwells that must be negotiated or where handrails may be encountered that a plasterer on stilts would fall over the top of. They are also particularly dangerous when used near window openings, where an overbalancing plasterer could easily fall through the opening to the ground below.

Extreme care should be exercised with using plasterer’s stilts.

**Eye Injuries**

Eye injuries from debris falling from roof or upper wall levels can result in issues ranging from minor irritation to major eye damage if the eyeball is scratched, particularly if you rub your eye with a dirty hand in the process of trying to remove the debris.

When working on ceilings, or on upper walls it is recommended that eye protection is worn to reduce the risk of eye injuries from falling debris.

When working on renovating existing ceilings the additional risk of falling debris can be created by flacking existing plaster work or paintwork that can be dislodged so additional care needs to be exercised in ensuring eye protection is worn.

**Dust, Moulds and Asbestos**

Dust, Moulds and Asbestos is another area of concern for plasterers. Dust is created particularly when sanding back, either by hand or using an electric or air compressor powered sander. The only advantage of the powered sander is that they are fitted with a dust extraction system, which whilst it captures most of the dust does not always capture all of the dust.

When sanding it is recommended that a dust mask is used to prevent breathing the dust particles created.

Mould can cause chronic respiratory difficulties if it is encountered and extreme care needs to be exercised if any work is done in areas that do or are likely to contain mould.
When removing old plaster for a re-sheet job consideration must be given to the potential for there to be mould behind the sheeting, particularly if there has been moisture build-up behind the sheeting. If this is likely, gloves, eye protection and breathing protections (rated dust mask) should be worn to prevent any contamination.

**Asbestos**

Asbestos automatically triggers the provisions of *High Risk Construction* activity under *Reg. 291d*, and requires the preparation of a Safe Work Method Statement. It also triggers requirements that it must be assessed and removed by a suitably competent and registered asbestos assessor and removalist.

Asbestos should be left alone if it is encountered and a comprehensive Asbestos Management Plan arrangement needs to be introduced.

**Dermatitis**

Dermatitis is the inflammation of the skin, and in plasterers this is usually on the hands. Dermatitis is caused by the intermittent or ongoing exposure to chemical irritants, which for plasterer’s includes, plaster dust, glues used to affix sheets to wall and ceiling fixtures, application of joining tape, or mixing and use of cornice cement and fillers.

The best way to prevent or limit the risk of dermatitis is to use either barrier creams or use gloves and when hand washing use an alcohol based hand sanitisers containing moisturisers rather than soap to reduce Dermatitis symptoms.

**Cuts, abrasions, etc.**

Plasterers routinely use knives for cutting plaster sheets, sharp edge spatulas and trowels for laying on plaster and shapers for finishing off curved installations. All of these can result in plasterers suffering cuts and abrasions, to the hands and fingers, which can range from being annoying (if it is a scratch or scrape) to being life threatening if say a Stanley Knife cuts an artery or vein in the hand or arm. Even the sharp corner of a square trowel can inflict significant injury to the hand or body.

Extreme care needs to be exercised when using these types of equipment. As with any knife, a dull knife is more dangerous than a sharp knife so when using a Stanley Knife make sure that the blade is sharp, particularly the tip.

With other tools likely to inflict cuts and abrasions, care needs to be exercised to ensure that they are kept in good condition and that handles are sound so that they are less likely to slip.

**Falling objects**

Falling objects are always a risk in any construction environment, whether it is a commercial or a residential project. Plasterers will often be working in areas where other trades may be working and may be working above where the plasterer is working.

When working from scaffolds or platform or step ladders make sure that you doing leave tools on the top level that can fall on you as you are climbing up or down the structure or cannot fall on someone else if the structure is left unattended.
If you are working below where someone else is working, whether it is on a commercial or residential structure you should wear a hard hat to protect you.

**Slips, trips and falls**

Slips, trips and falls are the most common type of injury causing accident in the construction sector and most often are the result of poor housekeeping. Making sure that the workplace is kept tidy is important in limiting the amount of risks associated with trip and fall hazards and remember that it is not just inside the workplace but also getting into and out of the workplace that needs to be kept tidy.

*Note: the above information is based on the document Health and Safety Advice for Plasterers by the Construction Industry Training Board of Northern Ireland.*

**Tiling**

Tiling is yet another one of the tasks in the construction industry that is largely performed by hand with some minor exceptions when tools are used for tile cutting.

The major risks as outlined in the publication ‘Health and Safety Advice for Wall and Floor Tilers’ produced by the Northern Ireland Construction Industry Training Board include, but are not limited to:

- Falls from height
- Eye injury
- Dust, Mould and asbestos
- Dermatitis
- Manual handling, including postural stress
- Slips trips and falls
- Using various types of tools
- Cuts and abrasions
- Exposure to noise

**Working at heights**

Working at heights occurs every time a tiler has to climb a ladder, step onto a trestle, or use a scaffold.

Where there is a risk of falling more than 2.0m this, like similar activities throughout construction will trigger the High Risk Construction activity provisions under Regulation 291a and will require the development and implementation of a Safe Work Method Statement.

When working off ladders tilers need to ensure that they have set the ladder up so that it is stable, that the legs are fully extended and they have positioned it to ensure that they do not have to over reach. Ideally three points of contact should be maintained but this can be problematic when applying tiles to walls at height.

It may be better, depending on the height of the wall being worked on to use a small platform or a mobile scaffold rather than using a ladder, in order to provide a higher level of safety.
**Eye Injuries**
Eye injuries most commonly occur, either as a result of tiling cement being splashed into the eye or small slivers of the tile flying into the eye whilst they are being cut, either with a tile cutter or angle grinder.

It is recommended that in both cases, when cutting tiles that eye protection is worn to prevent small particles of the tile flying up and striking the eye.

**Dust, Moulds and Asbestos**
Dust, Moulds and Asbestos is another area of concern for tilers. Dust is created particularly when sanding back to prepare a surface for affixing of the tiles. This can result in dust being generated which if breathed in can result in the onset of industrial asthma or other respiratory issues.

When sanding it is recommended that a dust mask is used to prevent breathing the dust particles created.

Mould can cause chronic respiratory difficulties if it is encountered and extreme care needs to be exercised if any work is done in areas that do or are likely to contain mould.

**Asbestos**
Asbestos automatically triggers the provisions of *High Risk Construction* activity under *Reg. 291d*, and requires the preparation of a Safe Work Method Statement. It also triggers requirements that it must be assessed and removed by a suitably competent and registered asbestos assessor and removalist.

Asbestos should be left alone if it is encountered and a comprehensive Asbestos Management Plan arrangement needs to be introduced.

**Dermatitis**
Dermatitis is the inflammation of the skin, and in tiles this is usually on the hands. Dermatitis is caused by the intermittent or ongoing exposure to chemical irritants, which for tilers includes, dust and tile cements and the frequent use of water for washing up.

The best way to prevent or limit the risk of dermatitis is to use either barrier creams or use gloves and when hand washing use an alcohol based hand sanitisers containing moisturisers rather than soap to reduce Dermatitis symptoms.

**Slips, trips and falls**
Slips, trips and falls are the most common type of injury causing accident in the construction sector and most often are the result of poor housekeeping. Making sure that the workplace is kept tidy is important in limiting the amount of risks associated with trip and fall hazards and remember that it is not just inside the workplace but also getting into and out of the workplace that needs to be kept tidy.

**Manual handling and postural stress**
Manual handling and postural stress issues for tiles are more common that many people think. Unless laying small tiles that are presented in sheets, every tile has to be individually handled. In some cases with
laying modern large size floor tiles these can be up to 600mm X 600mm and weigh upwards of 8kg each, so laying a large area is going to involve a lot of lifting and bending.

The bending part is also something that affects tilers more than a lot of the other trades in that there is a lot of bending down and work on hands and knees involved, quite often in cramped postures.

Remember to get up and stretch on a regular basis to ensure that your legs, back and arms don’t start to cramp up, which can be very painful.

**Slips, trips and falls**

Slips, trips and falls are the most common type of injury causing accident in the construction sector and most often are the result of poor housekeeping. Making sure that the workplace is kept tidy is important in limiting the amount of risks associated with trip and fall hazards and remember that it is not just inside the workplace but also getting into and out of the workplace that needs to be kept tidy.

**Cuts, abrasions, etc.**

Tiling can involve the use of a variety of tools, all of which can result in the tiler suffering cuts and abrasions.

Whilst the tiler may normally use a standard notched tilers trowel for applying the cement, they will also use other tools, particularly when they are cutting the tiles in preparation for laying. The use of either a straight edge tile cutter or a mechanical tile cutter (wet or dry) or the use of an angle grinder with a diamond blade, all carry the risk of cuts and abrasions.

Tiling trowels have sharp edges and corners and contact with the hand can result in injury. The use of a hand tile cutter can still result in cracking or splintering of the tile with the sharp edges of the broken shards like razor blades. The use of a wet or dry tile cutter can also result in small slivers of tile breaking off causing cuts, as can doing the same process using an angle grinder.

As outlined in the section on eye injuries, the same precautions needs to be taken when cutting tiles in preventing hand injuries in considering the wearing of gloves to protect the hands from the risk of injury.

**Noise induced hearing loss**

Using any form of mechanical cutting process for cutting tiles will invariably expose the tiler to the risk of noise induced hearing loss. This occurs when the worker is exposed to noise levels higher than 85 DbA for prolonged periods or higher levels for shorter periods.

Whenever using any type of mechanical cutting process, hearing protection is a must for all tilers.

The above information is based on the publication ‘Health and Safety Advice for Wall and Floor Tilers’ produced by the Northern Ireland Construction Industry Training Board.
Reference Listing


