

# Safety Training Course of Construction Workers of Specified Trade Plumber (AS04)

## Key Points

Version: 2023-07

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# 1. Introduction - Causes of Accidents

## 1.1 Falls of persons

- Various trades in construction industry wish to complete their work as soon as possible and every second counts; however, unexpected incident may occur if there is no proper coordination among works;
- Various trades (e.g. plumber) lifts their materials onto platform/ scaffold for preparation of pipe installation. However, such action not only hinders other trades' (e.g. leveling, rebar fixing etc.) work, but also leads to falling objects if those materials are not properly fixed.

# 1. Introduction - Causes of Accidents

## 1.2 Fire

The importance of fire prevention is greatly emphasized in construction industry, and plumbing work is also part of it. Hot works should be avoided with other flammable work (e.g., painting) simultaneously. The spark/ glare generated from hot work should also be sheltered. Working area should be properly demarcated to alert other workers no unauthorized entry.

# 1. Introduction - Causes of Accidents

## 1.3 Connection of Cast Iron Pipe – Severe Burns

- Melting the padding materials with heat is needed for connection of cast iron pipe. After green lead is liquefied with heat, it will explode when encounters water. Such hot composition will cause severe burns to skin.
- Proper arrangement on work sequence should be made for plastering work and painting work etc. to avoid various trades working simultaneously on vertical direction.



# 1. Introduction - Causes of Accidents

## 1.3 Connection of Cast Iron Pipe – Severe Burns

- Do not underestimate the simpleness of tasks during hot work (e.g., arc-welding, flame cutting and melting black lead etc.), the workers will be affected by strong glare when they are focusing on hot work and thus, lower their vigilance to incident.
- Arrangement of an extra worker for assistance of work could be a back-up to the emergency response.



# 1. Introduction - Causes of Accidents

## 1.4 Water Pipe Pressure Test – Injured by Water Column

- Water pipe pressure test is the final stage of plumbing work. The water pressure in the pipe under test will be higher than the normal working pressure and may lead to blasting of water pipe anytime. Therefore, other nearby works shall be evacuated, especially users for electric tools, to avoid hazards of electrical leakage. The water in the water pipe shall be fully drained away after water pressure test



# 1. Introduction - Causes of Accidents

## 1.4 Water Pipe Pressure Test – Injured by Water Column

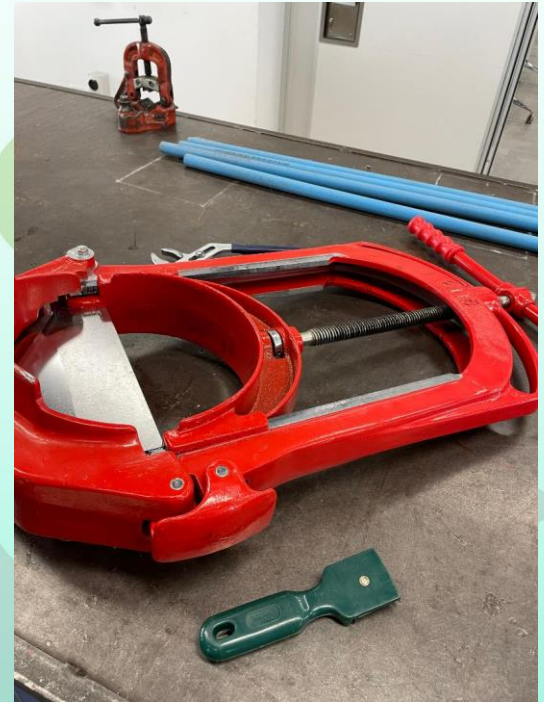
- Air pressure test is another medium for pressure leakage test with air compressor with valid certificates and such air compressor shall be placed at a place without influence and hazards to others.



# 2. Safe Use on Machineries

## 2.1 General Safety Practices

1. Various types of machines are applied in plumbing work such as cutting machine, abrasive wheel, grinding machine and threading machine.
2. Those machines are electrical and hazards of rotating part of machine should be addressed. Proper safety goggles should be used to protect the flying objects into eyes from operating machines
3. Follow the safety measures for use of machineries and check whether the guarding is properly adjusted





# 2. Safe Use on Machineries

## 2.1 General Safety Practices

4. The movement of machinery basically includes rotation, sliding, reciprocating movement or combination of the above-mentioned. Tearing or extrusion can be caused by various components of machineries. Rotating parts of machines can lead to accident of body entanglement. Workers are liable to be struck or trapped inside the machine, between fixed components or be hit by moving part of machines.



Source: OSHC

# 2. Safe Use on Machineries

## 2.1 General Safety Practices

5. The ideal way to prevent accident related to machineries is to involve safety in machine design. By so doing, safe operation on machine can be achieved without any modification.



Source: OSHC

# 2. Safe Use on Machineries

## 2.1 General Safety Practices

6. The design of fixed guard should be capable of preventing body contact with dangerous part of machines and withstand impact from machine operation without displacement. Such fixed guard should only be opened with tools.



# 2. Safe Use on Machineries

## 2.1 General Safety Practices

7. Fixed guard is commonly seen in rotating parts of drilling machine, electrical threading machine and grinding machine in plumbing industry.



Source:

[https://www.labour.gov.hk/eng/news/video/LD\\_Story20\\_Eng.mp4](https://www.labour.gov.hk/eng/news/video/LD_Story20_Eng.mp4)

# 3. Transportation of Materials

- The stability of pipes, especially long pipes and plastic pipes, should be properly maintained during lifting since such materials is liable to be broken in mid-air and potentially cause a serious consequence. Moreover, soft pad can be applied to prevent lifting gears are damaged by the sharp edge of lifting materials.
- Materials (e.g., oil drum and pipes etc.) cannot be thrown from height and special care should be given to fragile items (e.g., sanitary ware) to avoid damage during manual handling/ transportation.

# 3. Transportation of Materials

- Attention should be paid to coordination among workers during lifting work, use of walkie talkie is an ideal medium for communication. Otherwise, a mutually understood hand signals should be used.
- Good communication should be maintained during carrying out manual handling by a team of 2 persons to ensure simultaneous movement (e.g., balance, loading and unloading). Frequently used heavy materials are best placed at waist level for easy access.

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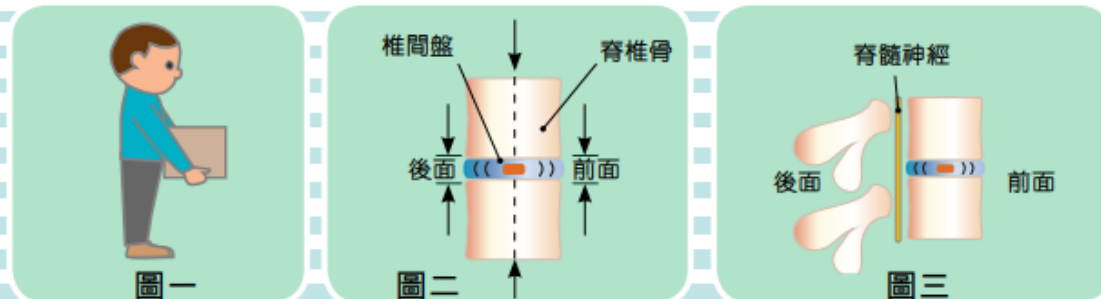
Source: HKLD



source : CIC

And follow the requirement and use the materials properly

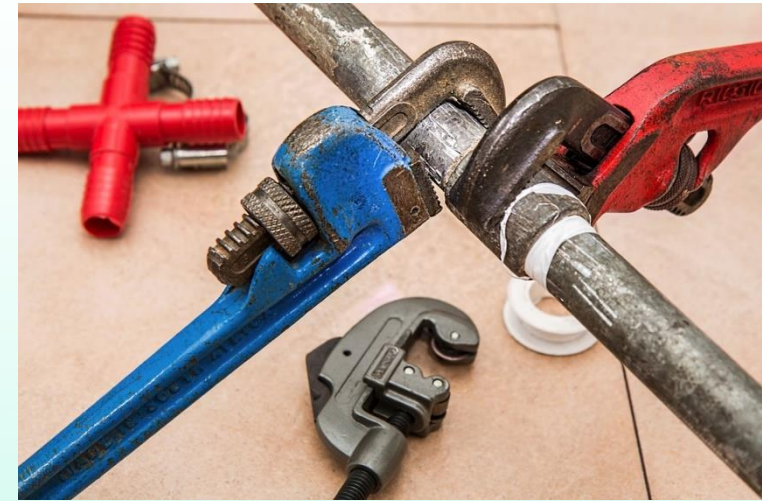
圖一：保持腰背的自然弧度。圖二及圖三是正常椎間盤的側視圖。



# 4. Coordination for installation work on site

## A) Fix Pipe Bracket

Electric drill shall be used for installation of pipe bracket, attention should be paid to the hazards associated with electrical tool (e.g., dryness of bamboo scaffold, stability of temporary power cables and tidiness of access)



Source: <https://pixabay.com/images/search/pipe%20work/>

## B) Transportation of Materials

The range of pipes to be installed varies from 2m to 6m in length. Attention should be paid to the transmission path during materials transportation to outdoor scaffold and no dismantling of bamboo members shall be allowed.



# 4. Coordination for installation work on site

## C) Installation of Pipe

There are various connection methods for different types of pipes. For instance, galvanized sheet pipes are connected with pipe threads while copper tubes are installed with soldering or glue. Proper safety preventive measures (e.g., segregation to working area) to prevent strong glare and flying sparks during soldering and chemicals hazards (e.g., corrosive and flammable materials) to human body . Proper work sequence should be arranged to different work trades to avoid congested working environment.





# 4. Coordination for installation work on site

## D) Tidy Up Work Area after Completion of Work

As water hose pipes are easy to roll, riding on rolling hoses is easy to fall. Debris produced from plumbing work should be cleaned properly. Flammable debris (e.g., cloth scraps, yarn and grease etc.) should be put into trash bin with cover to avoid fire hazard.

External scaffolding is a working platform for convenience of work, all debris should be cleared and avoid overloading the scaffold



Source: CSHK



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