



香港
建造
學院 | HONG KONG
INSTITUTE
OF
CONSTRUCTION

Safety Training Course of Construction Workers of Specified Trade

Curtain Wall Installer (AS9)

Key Points

Version: 2023-10

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CONSTRUCTION INDUSTRY COUNCIL 建造業議會

1. Introduction - Causes of Accidents

1.1 Fall of Person from Height

The installation of curtain walls involves work at height on the exterior walls, lifting work and installation of large glass/aluminum panels. Various types of power hand tools are needed to assist with the installation. Curtain wall work often takes place at heights on exterior walls and building surfaces. Accidents can occur if the working platforms or scaffold structures are unstable or lack of fall protection equipment.

1.2 Falling objects during Lifting

The glass/ aluminum panels are heavy. If they are improperly stored or lifted, it can lead to serious accidents. The coordination between the curtain wall worker and the crane operator, as well as the selection of appropriate lifting equipment and personal protective gear, requires experienced personnel who have a good understanding of safety protocols. Only with the proper application of safety knowledge can the work be efficiently and safely completed.

2. Safety Guideline on Lifting Work

2.1 Basic requirement on Lifting Appliance

The lifting appliance is

1. Of good mechanical construction, made of strong and sound materials,
2. Properly maintained
3. The arrangements for fixing and anchoring the appliance are adequate to secure its safety
4. Clearly displayed with SWL
5. With valid examination certificate



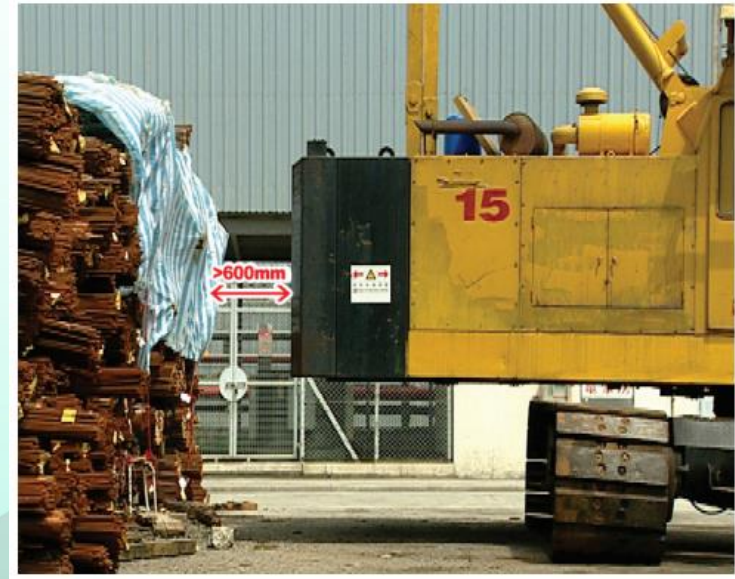
Source: OSHC

Erection, dismantling or alteration of cranes to be under supervision of a competent person

2. Safety Guideline on Lifting Work

2.2 Precautions to be taken where lifting appliance has travelling or slewing motion

1. Ensure that an unobstructed passageway, not less than **600 millimetres wide**, is maintained between any part of the appliance liable so to move and any nearby guard rail, fence or other fixture
2. If at any time it is impracticable to maintain any such passageway at any particular place, the owner shall ensure that all reasonable steps are taken to prevent persons from having access to that place when the appliance is in use.



Source: OSHC

2. Safety Guideline on Lifting Work

2.3 Inspection, Thorough Examination and Testing of Lifting Appliance

1. All lifting appliance shall be thoroughly examined by a competent examiner at least once in the preceding 12 months, and a certificate in the approved form (Form 5) should be obtained;
2. Crane, crab or winch shall be thoroughly examined by a competent examiner and can only be used after a valid certificate of Form 3 has been issued.
3. Other lifting appliance (e.g.: crane, crab or winch) shall be thoroughly examined by a competent examiner and obtain a Form 4 before use;

2. Safety Guideline on Lifting Work

2.3 Inspection, Thorough Examination and Testing of Lifting Appliance

4. In the event of any alteration or repair which may affect the stability or the strength of a lifting appliance, proof load test should be carried out to ensure that all parts affected by the repair or alteration are structural sound and stable for further use. Where a periodic test is required by regulations, a proof load test should be conducted to ensure that the performance and capacity of the appliance are in safe working order;

5. Lifting appliance shall be installed with automatic safe loading indicator (ASLI) according to the legislation and displayed on the examination results.

2. Safety Guideline on Lifting Work

2.3 Inspection, Thorough Examination and Testing of Lifting Appliance

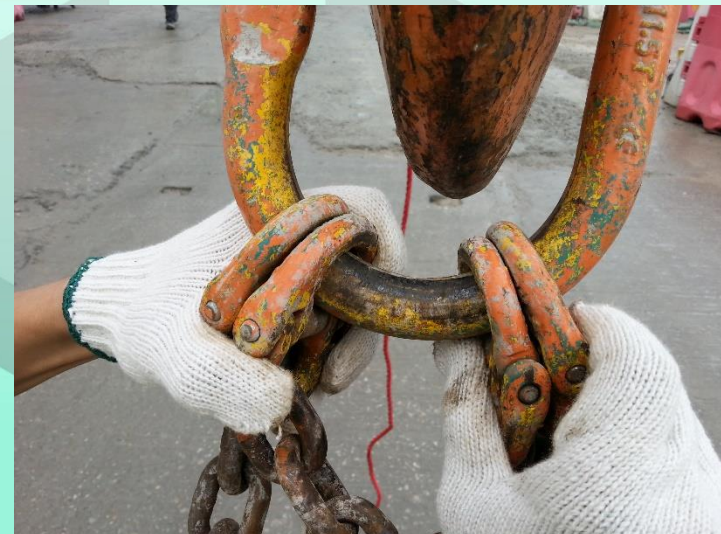
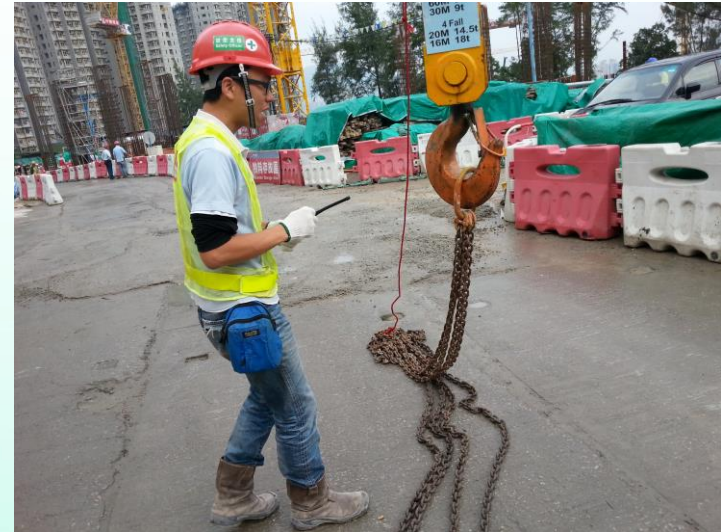
6. It is a statutory requirement for the lifting appliance to be inspected within the preceding 7 days prior to use by a competent person. The competent person shall issue a certificate in the approved form (Form 1) to record the state of a lifting appliance after the inspection.



2. Safety Guideline on Lifting Work

2.4 Lifting Gears – Chain Sling

1. Use of appropriate lifting gear
2. Ensure the lifting gears are in good condition before use. Do NOT use in case of damage, deformation or cracks are found and report it to supervisor.
3. Ensure the lifting gear is displayed with its SWL and do NOT overload it.










2. Safety Guideline on Lifting Work

Source : CIC

2.4 Lifting Gears – Chain Sling

4. Ensure the color of lifting gear is matching with the approved color code;
5. Ensure no kinks of the lifting gear ;
6. Properly store the lifting gears after use
7. Protective pads shall be used for loads with sharp edges.

| | | |
|---|-------------|---|
| Jan - Mar 一月至三月 | BLUE 藍 |  |
| Apr - Jun 四月至六月 | YELLOW 黃 |  |
| Jul - Sept 七月至九月 | GREEN 綠 |  |
| Oct - Dec 十月至十二月 | ORANGE 橙 |  |
| To be removed from the site 不能再使用 待移離工地 | RED 紅 |  |
| Equipment under quarantine 工具待驗 | WHITE 白 |  |
| Not used for lifting purpose 不可作吊重用途 | BLACK 黑 |  |



2. Safety Guideline on Lifting Work

2.5 Lifting Gears – Wire Sling

1. Understand the weight of the materials;
2. Do not overload the wire sling;
3. Do NOT use wire sling to lift hot objects and keep the slings away from welding and flame cutting tasks;
4. All Wire slings shall be checked before use. If damaged wire sling is found, it should be removed.
5. Protective pads shall be used for loads with sharp edges;
6. Do not drag wire sling on ground;



鋼絲
突出

索心
突出

凹陷的
索股

索股
突出

吊索被
壓扁

扭結

扭結

吊索呈波
浪狀起伏

孔眼



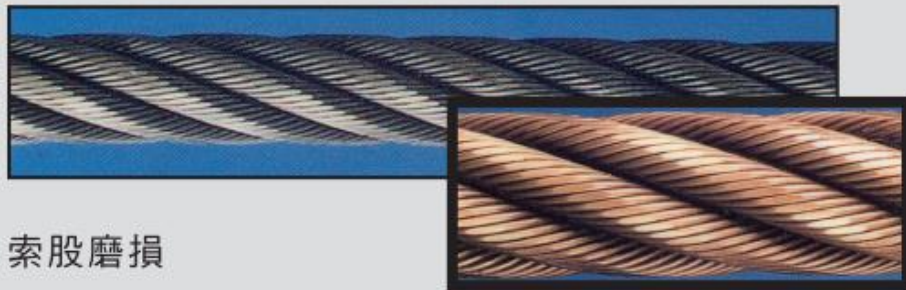
鋼絲折斷



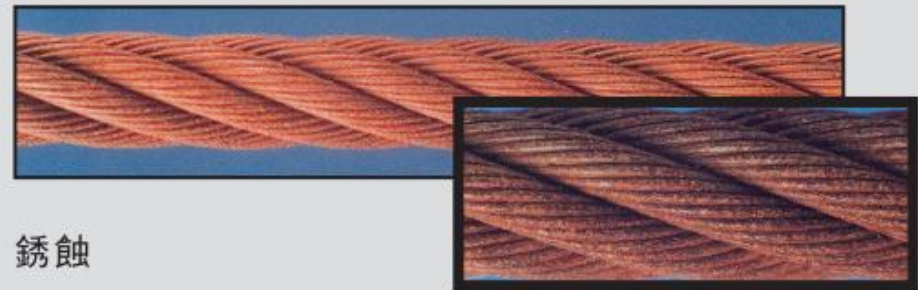
金屬啤套移位



金屬啤套損壞
(例如變形, 磨損及破裂)



索股磨損

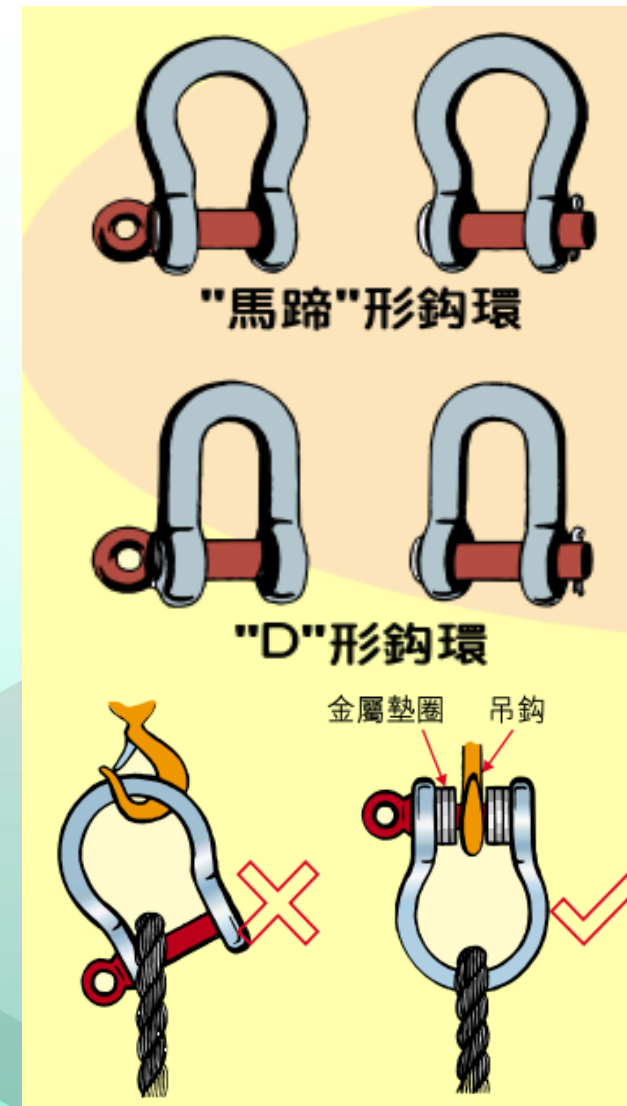


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2. Safety Guideline on Lifting Work

2.6 Lifting Gears – Shackle

1. Use appropriate type of shackle;
2. Understand the SWL of shackle before work;
3. Do NOT use shackle without display of SWL;
4. Check the body and pin of shackle to see if they are intact;
5. Inspect the shackles and bolts for excessive wear. If the wear exceeds ten percent of the original diameter, they should be destroyed and replaced



Source:

http://www.oshc.org.hk/oshc_data/files/HotToPic/CB205C.pdf

2. Safety Guideline on Lifting Work

2.7 Lifting Gears – Hook

1. Check for any deformations. If there is any suspicion, standard charts or drawings can be used to compare and verify the dimensions;
2. If the opening of the lifting hook exceeds one-fifth of its original size, it should be destroyed;
3. Carefully inspect for cracks, cuts, dents, and rust marks;
4. The swivel hook (with a "twist head") should be able to rotate freely. The screw cap that secures the hook onto the shaft must be fixed in place using a split pin or another appropriate method to ensure it remains in position.



Source:

http://www.oshc.org.hk/oshc_data/files/HotTopic/CB205C.pdf

3. Safety Key notes on installation of glasses/ aluminum panels

3.1 Key for Installation

1. All lifting appliance/ gears should possess with valid examination certificates and equipped with ASLI within site area;
2. Strictly prohibit lifting with single sling;
3. Use two-legged slings to strike balance for lifting of materials;
4. Ensure the lifting angle between 2 slings is within 90° ;
5. Use lifting tapline to stabilize the large-sized materials (e.g.: glasses/ aluminum panels) ;
6. Do not stay within lifting areas. Approach the lifting materials when it is lowered to 1m above the ground and detach the lifting hook only when the materials is stable.

3. Safety Key notes on installation of glasses/ aluminum panels

3.2 Material Transportation

1. When handling glass/aluminum panels, it is important to ensure the stability of the materials during loading and unloading. Check if the suspension points of the cable cause any wear or damage to the slings themselves. When bundling a large quantity of materials together, secure the bundle tightly to prevent loose materials from falling, which could lead to serious accidents.



3. Safety Key notes on installation of glasses/ aluminum panels

3.2 Material Transportation

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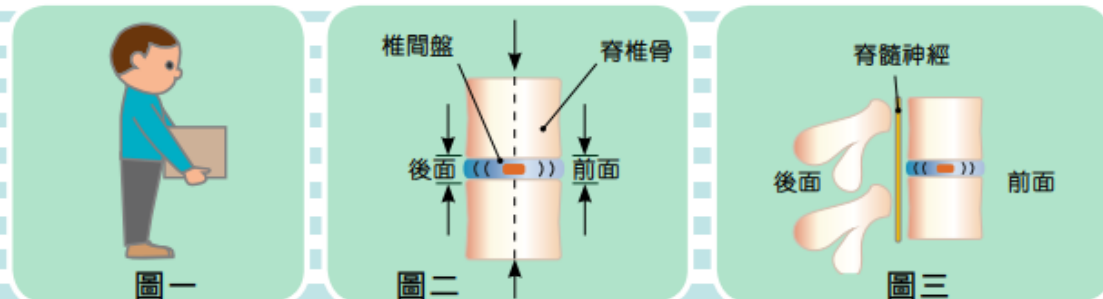
- 2. Coordination among workers for material transportation is important. Walkie-talkie should be used for communication for lifting tasks. Otherwise, clear signals understood by both parties shall be used.
- 3. During manual handling, effective communication shall be maintained to achieve synchronized motion. Frequently used heavy materials shall be stored at waist level.



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。



Source : HKLD

3. Safety Key notes on installation of glasses/ aluminum panels

3. Temporary Storage of Materials

Materials will be temporarily stored in working areas. Excessive, unstable storage of materials or adverse weather will easily cause accidents and are illustrated with following points:

1. Storage location should be of sufficient strength to bear the weight of materials;
2. Glasses/ aluminum panels should be stored on rack to prevent slipping;
3. Storage location where is easily assessable by vehicle;
4. Avoid stacking large quantities of glass/ aluminum panels near edge of pits or building;
5. Avoid stacking large quantities of glass/ aluminum panels in working area.



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生命第一
LIFE FIRST



對危險說 **不**

SAY **NO** TO DANGER

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