

Here is the footage of Site Safety Forum for Works Contracts and Property Services Contracts 2017 which was held on 6 July 2017.

The speaker is the Contracts Manager of Tysan Foundation Limited, Mr. Edward Cheng Ho-ming  
His presentation topic is Ground Release Shackle for Safety Lifting of H-Piles.

Good afternoon everyone, Cheng Ho-ming from Tysan Foundation. Today, I will introduce the foundation site of Housing Department located in Ma On Shan Area 90B.

It is mainly about the safety locks for the ground-operate vertical lifting of H-piles.

It is very common to use H-piles for piling in Hong Kong.

The picture shows that the H-piles are quite dense and crowded.

This included the crane, man cage and the hydraulic lifting platform for construction.

During the work, there will be a risk of objects and body falling from height.

If the welding is not proper, it will cause a domino effect, then H-piles may be hit accidentally,

and it will lead to serious consequences.

It created certain levels of danger to people at both inside and outside of the construction site.

I would share the thinking process with everyone.

Considering the materials we used in the past, learning from the mistakes in the past.

The mechanical clamp which we used in the past weighs 15 kg, the maximum weight that a human can lift is 25 kg.

The role of the clamp is to fix the H-piles for lifting,

but if it is hit, worn down or the H-piles is covered with grease, the H-piles will fall during the lifting process

and the consequences could be disastrous.

Thereafter, it was developed to punch holes on the H-piles.

Using shackles, chains and cranes to help the lifting.

After the basic welding

it still needed the crane or hydraulic lift to lift the man cage

to remove the shackle at the top of the H-piles and then return the man cage to the ground before the start of the piling process.

Later, it was developed to stay on the ground for operation,

which is a single latch clip which involves using the lock and tie the iron chain through the holes on the top of the H-piles.

After basic welding,

workers will need to untie the locking clip on the ground with a steel wire and start the piling process.

The mentioned methods need to make holes on the H-piles which was not ideal in construction.

Now, we will add a pre-punched iron plate on the top of the H-piles.

Connect it with a double safety lock clip.

The single latch of the locking clip is pre-attached to a small iron plate.

The single latch of the locking clip also has a safety measure

which prevents the locking clip from opening due to mechanical failure or human factor.

In simple terms, the hole in the small iron plate is about 50 mm from the edge, and pre-welded to the H-piles,

which is a design based on experience from the past.

With this little design input, the return cannot be measured in terms of money.

Protecting colleagues' lives and reduction of hazards are our goals.

The following video is a short introduction.

The speaker is explaining the content of the video.

First, pull the locking clip up and pass through the hole.

Then pull the safety device and fix it up properly.  
After that, you can carry out the lifting work.  
After completing the basic welding works,  
only one worker needs to operate two steel wires on the ground at the same time.  
Remove the locking clip.  
The piling work can proceed immediately.  
Under the environmental regulations, the foundation works  
can be executed for 3 to 5 hours only on a week day,  
which limits the construction time.  
The advantage of the double safety lock clip is safe lifting.  
Only one worker is needed to work on the ground.  
Thirdly, no additional cranes, mancages  
or lifting platforms are needed to assist in operation and this can reduce the emission of exhaust gas.  
It also saves cost and frees up space  
and no follow-up work is needed.  
Today's sharing finishes here.

The following part is the audience answering the questions asked by the speaker.  
The question has been put on the screen already.  
Simple design can only test everyone with a simple question.  
How many steel wires does this double safety lock clip  
need to operate at the same time?  
There is a friend raising a hand over there.  
Please hand in the microphone.  
Audience is answering question  
Two.  
Guest response  
Correct.  
Congratulations and thank you Mr. Cheng.

Disclaimer

### Safe Work· Zero Incident

Site Safety Forum 2017 for Works Contracts and Property Services Contracts  
"Careful design can reduce accidents and ensure smooth and safe execution of works"

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