

24833: Identify and maintain fencing tools and equipment, and identify fencing construction materials and wire types

Level
2



Learner Guide

Unit standard 24833 v2

Level 2

Credits 3

Identify and maintain fencing tools and equipment, and identify fencing construction materials and wire types.

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Introduction

Learning outcome

To successfully complete this unit standard you will show that you can identify and maintain fencing tools and equipment and can also identify fencing construction materials and wire types.

Notes

- All evidence presented in this unit standard must be in accordance with the Health and Safety at Work Act 2015.

If you require the Learner Guide to be printed on coloured paper, contact Primary ITO on 0800 20 80 20 and talk to our Learning Support Team.

Glossary

You may find new words (highlighted in **bold black**) as you read through this Learner Guide. The meanings of these words are in the glossary at the back.

Symbols

You'll also see symbols which we've used to help you know what's going on, for example:



Alert: you must be aware of this.



Activity: a written activity for you to do.



Do this: a practical activity for you to do.



Search online: refer to online references for information on this topic.



Top tip: key information and useful tips.



Question: a question for you to think about.

Assessment

You will find a separate assessment booklet for this unit standard. You will need to work through the activities in the assessment.

Your Verifier will fill in the Verifier declaration once they are satisfied you have achieved the learning outcomes for the unit standard. Your Verifier may be your Supervisor or Workplace Trainer.

The Assessor will check all declarations and fill in the final sign-off once final competency is achieved. The Assessor may be your Training Adviser or a Workplace Assessor.

Fencing tools

This section looks at the different tools you may use when constructing a fence, and how to look after them.

Fencing tools

When you are building a fence you will find yourself using some common tools, such as a hammer, as well as some **specialist tools**.

Knowing what to use each of the tools for and how to take care of them will help you be an efficient and fast fencer.

▶ Chain wire strainers

- What are they?

Chain wire strainers are used to help create tension when you are building a fence. They are used to pull wires together and create space for them to be joined and to create the right **tension** at the end of a fence.



- How can I take care of them?

Clean strainers with a dry cloth at the end of each work day. Make sure they are stored in a dry place and oil the moving parts regularly.

▶ Chisel

Chisels are usually used to make a hole to fit the end of a stay post into strainer. They can also be used when you might need to shape posts or battens.

Clean it with a cloth at the end of each day. Store it in its cover and in a dry place.

Chisels need to be sharpened regularly.





A number of fencing tools need to be sharpened regularly. The tool can be damaged if this is not done correctly.

Talk to your Supervisor about how tools in your workplace are sharpened. Ask them to teach you how to sharpen your tools the right way.

► Fencing spade

Fencing spades usually have longer handles (shafts) than other types of spades. This is because they are used to dig post holes. The longer handle helps you dig deeper holes.

Make sure you keep your spade clean and dry. You will need to wash it down at the end of each work day and then dry it with a cloth. Store it in a dry place to stop the spade rusting.

Fencing spades need to be kept sharp.



► Hammer

Hammers are used to drive staples into fence posts and battens. Many hammers also have a 'claw end' which helps pull out staples that have not been put in the right position.

You should keep your hammer clean and dry by wiping it with a dry cloth at the end of each work day. Store it in a dry place.



► Manual post rammer

Manual post rammers are used to push or 'ram' the soil around a post. They are also used to keep a strainer in position while the hole is filled in.

Make sure you keep your rammer clean and dry. If your rammer gets dirty, wash it down at the end of the day and dry it with a cloth. Store it in a dry place.



► Pliers

Pliers can be used for a range of fencing jobs including; cutting wire, holding wire, and pulling out staples.

You should keep your pliers clean and dry by wiping them with a dry cloth at the end of each work day. Make sure you store them in a dry place.



► Post thumper

Post thumpers are tools which fit over the end of a post and are used to ram posts by hand into the ground.

Make sure you keep your thumper clean and dry. You will need to wash it down at the end of each work day and then dry it with a cloth. Store it in a dry place.



► Shovel

Shovels are specially shaped to help move large amounts of loose soil. You will usually use a shovel to help fill post holes back in.

Make sure you keep your shovel clean and dry. If your shovel gets dirty, wash it down at the end of the day and dry it with a cloth. Store it in a dry place.



► Spirit level

A spirit level is used to make sure wires, rails, gates and strainers are straight – whether horizontally or vertically.

Clean them with a cloth at the end of each day and store them in a dry place. Be careful to protect them when they are being transported – while the level is sturdy, they can be broken if other tools or equipment fall onto on them.



► Steel post jack

Steel post jacks are used when bringing down or moving fences. They give extra **leverage**, making it easier to lift posts from the ground.

Clean your jack with a cloth at the end of each day and store it in a dry place.



► Wire cutters

Wire cutters are used to cut wire when fencing. They are important pieces of equipment for building or taking down a fence.

Clean your cutters with a dry cloth at the end of each day and store them in a dry place. To keep them working smoothly you will need to oil them regularly.



► Wire dispenser

Wire dispensers are sometimes known as 'spinning jenny'. They hold wire coils in place while letting the wire to be drawn out smoothly and without tangling.

Clean your dispenser with a dry cloth, or hose it down and dry it if very dirty. Make sure it is stored in a dry place and oil the moving parts regularly.



► Wire tensioner handle

Wire tensioner handles are used to wind up permanent strainers in the fence. They help make sure that fences are tensioned correctly when they are built and are kept at the right tension. To keep fences livestock proof it is important that the wires are kept tight.

Clean wire tensioner handles with a dry cloth. Make sure they are stored in a dry place and oil the moving parts regularly.



Construction/building materials

This section looks at the different construction materials you will use when building a fence.

Construction materials

The fencing construction material you use will depend on the type of fence you are building. While there are some materials that might be used to build any type of fence, other materials are designed for a specific kind of fence.

▶ Clips

Clips are used in both **conventional** and electric fencing. They can be used to attach wire to fibreglass rods or steel posts. They can also be used to attach wire netting to top and bottom wires.



▶ Crimps

Crimps are used in place of knots to join fencing wire together. They are placed over two wire ends and then squashed together using a crimping tool. Once squashed together, they hold the wires tightly together.



▶ Cut out switch

Cut out switches are used in electric fencing. They are connected to the electrical supply of a fence and allow parts of the fence to be 'turned off'. This means parts of fence can be easily moved or worked on without the whole fence being turned off.



► End assembly

An end assembly is where you position your strainer post. It is found at the end of a fence line. It anchors the fence and they are considered the most important posts in the fence line. They carry the strain of the fence and support any gates if necessary.

The picture shows an end assembly that is ready made. They can also be made by hand using wood.



► Insulators

There are a wide range of different types of insulators. They are all used with electric fences to contain electricity and stop wires **earthing**.

The type of insulator pictured is used to attach electric wires to a wooden post.



► Intermediate support materials

Any materials that are used to keep wires correctly spaced, tensioned and positioned between posts or strainers are known as 'intermediate support materials'. These are usually wooden or fibreglass battens. If droppers are used, they are usually made of wood or metal.



► Joint clamps

Joint clamps are used on **electric fences**. They connect fence wires together to create a solid electrical connection.



▶ Lead out wire

Lead out wires are used with **electric fences**. They carry electricity to other fences on either side without losing **conductivity**. Lead out wires are made of highly conductive wire – usually aluminium. Some lead out wires, like the one pictured, are insulated.



▶ Line joiner

Line joiners are used in the place of knots or crimps to join ends of fencing wire together and keep them at the right tension. They can be used by themselves and don't need any tools to make sure they hold the wires together.



▶ Staples

Staples are used to fix fencing wire to posts and battens.

To keep wires in the right position they need to be driven into the fence at the right angle.



▶ Undergate cable

Undergate cabling is used with **electric fencing**. It is used to carry electricity flow across gateways. In many cases the wires are placed in a trench under the gate, but you may also see them passing over gateways.

Some undergate cables can be used as lead out cables.



▶ Warning signs

They are a range of different warning signs that may be used during fencing. If you are fencing on a roadside, you might use a warning sign to let passing motorists know work is being carried out.

Electric fences must have warning signs attached at particular points (at entry/exit points) to let people know that the fence is electrified.



▶ Wire tensioner

Wire tensioners are also known as permanent tensioners. They stay in place on wires and can be used to help correctly tension wires when the fence is built. They also let the fence be tensioned after the fence is built. They are used with a wire tensioner handle.



To stop your building materials from getting damaged when you move them, make sure you store them safely so they aren't hit by other tools and equipment.

Types of fencing wire

This section looks at the different types of fencing wire you will use when building fences.

Fencing wire

Different types of fencing wire is used in different situations and to contain different types of livestock.

▶ 2.5 mm galvanised high-tensile (HT) wire

Galvanising is a process where steel wires are coated in a thin layer of zinc or zinc and aluminium. This protects the wire from rust, especially in coastal areas, and extends the life of the wire.

High-tensile wire is strong and less likely to stretch than mild steel wire. This means it snaps more easily if stock push against it. While high-tensile wire generally does not cause injury to livestock, if it has snapped the ends that stick out can cause damage.

High-tensile wire is mostly used in **electric fencing** and 2.5 mm galvanised high-tensile wire is also used for sheep and cattle fencing, as training and brace wire, and as lead out wire.



▶ 4 mm galvanised mild steel wire

Mild steel is also known as 'soft' or low-tensile wire. It has a lower carbon content than high-tensile wire, which makes it easier to stretch and bend into different shapes.

It is often used where fence posts are closely spaced. It is less likely to injure stock, so 4 mm galvanised mild steel wire is often used when building fences for sheep, cattle, and horses.



► Barbed wire

Barbed wire is usually made of two galvanised wire strands wrapped together. Sharp pieces of wire are left sticking out every 100 mm or so.

Depending on the quality of the galvanising, barbed wire rusts at the barbs and this shortens the life of the wire.

Barbed wire can injure and damage livestock easily. It can easily cut them or pull fleece away from the skin.

It is still sometimes used to stop livestock pushing their heads through a fence.



It is illegal to electrify barbed wire.

In some parts of the country it is also illegal to use barbed wire on a boundary fence, or on a fence that borders a road or public right of way.

Talk to your Supervisor to find out how barbed wire can be used in your area.

► Fabricated netting

Fabricated netting is made up of horizontal and vertical wires which are knotted together to create small squares. Netting can be made of either high-tensile wire or mild steel wire. It also comes in a range of designs for different livestock and environments.

Because of the way the netting is formed, it is a low risk to livestock.

Netting can be used to contain different types of livestock, but is most often used to help contain young animals, such as fawns and lambs, and for non-traditional animals such as ostriches.

Talk to your Supervisor to find out how it is used in your workplace.



Glossary

Term	Definition
Conductivity	How much a material can conduct/take electricity.
Conventional fencing	These are non-electrified fences. Usually they are built with wooden or steel posts and battens and wire.
Corrosion	Damage caused to the wire.
Dispenser	An object that lets wire cables to be wound around it and then it allows the wires to be drawn out when needed.
Earthing	<p>Is placing an earthing rod into the ground to create an electrical current circuit.</p> <p>For an electric current to shock, the electric current needs to complete a full circuit. This means an electric current moving from the fence energiser, along the fence wires, through the animal, into the soil and to a nearby earthing rod, and back to the energiser.</p> <p>If earthing rods are not used or not at the right distance apart, the circuit cannot be completed and the animal will not be shocked when it touches the fence.</p>
Electric fencing	Fencing that is built to be electrified.
Fabricated	In this context it most often refers to netting. It refers to the fact that different wires must be assembled to create the netting.

Term	Definition
Galvanising	Is a process where steel wires are coated in a thin layer of zinc or zinc and aluminium. This protects the wire from rust, especially in coastal areas, and extends the life of the wire.
Insulators	Are used with electric fences to contain electricity and stop wires earthing.
Lead-end	The end of a wire coil from which wire can be easily drawn.
Leverage	Apply force using a lever/tool.
Manual post rammer	Are used to push or 'ram' the soil around a post.
Mechanical crimping	Using a mechanical tool to join two wires together by pinching them and making small folds that hold the wires together.
Specialist tool	Tools that need to be used to complete a job. Other common tools, such as a hammer, can not be used to complete this job. For example, chain wire strainers are a specialist tool used to help create tension when you are building a fence.
Tension	Is how hard to pull/stretch the wire.
Termination	The end of.

Resource Feedback

In order to keep our resources as up-to-date and relevant as possible we would appreciate any comments, feedback or suggestions you may have with regard to this particular resource or others that you have used.

Please contact us via email **product@primaryito.ac.nz** if you have any suggestions that you feel would be useful.

Please remember to indicate the resource you are giving feedback on in your email, and please provide your contact details.

Thank you for taking the time to provide us with feedback.

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