

# Preparing floor coverings

**Supporting:**

***MSFFL2002: Receive and prepare  
floor covering materials for  
installation***



## Learner guide



INTAR Flooring Technology Project 2015



# Preparing floor coverings

## Learner guide



This Learner guide is part of a suite of resources developed for learners undertaking the *Certificate III in Flooring Technology* (MSF30813). Its purpose is to help apprentice floor layers, sales staff and other workers to acquire the background knowledge needed to satisfy the theoretical components of the competencies covered. It is not designed to replace the practical training necessary to develop the hands-on skills required.

### **E-learning version**

All of the content material contained in this Learner guide is also available in an e-learning format, which has additional photos, interactive exercises and a voice-over narration of the text. The e-learning version can be viewed on the web at: [www.intar.com.au](http://www.intar.com.au)





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Parts of this resource are based on material developed by Workspace Training for the original Flooring Technology Project, produced in 2012-2014 for the Workplace English Language and Literacy (WELL) Program.

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In all cases, users should consult the original source documents before relying on any information presented in the resource. These source documents include manufacturers' installation guides, Australian Standards, codes of practice and other materials produced by specialist industry bodies and government agencies.

## About INTAR

Industry Network Training and Assessment Resources (INTAR) is a partnership owned by Workspace Training and Vaughan Consulting Software Solutions – the development team that produced the original Flooring Technology project for the Commonwealth Government WELL Program.

INTAR was formed to enable the development work to continue, following the abolition of the WELL Program in 2014. All new materials are now paid for by subscribers and members who contribute to the INTAR funding pool. Access to the subscription site is via a password protected area.

Members of INTAR include TAFE teachers, RTO trainers, manufacturers and other suppliers of industry products and services.

In addition to learner guides, workbooks and on-line materials, INTAR also provides members with the following resources and services:

- nationally validated assessment tools for all competencies covered in the learning materials
- participation in the validation groups that meet to validate assessment tools and strategies
- forums for direct consultation with manufacturers, employers and other industry personnel
- evidence of the continuous improvement, validation and consultation processes, suitable for use in demonstrating compliance with the *Standards for RTOs 2015*.

## Acknowledgements

The INTAR project team comprises the following people:

- David McElvenny (Workspace Training) – lead writer and project manager
- Kath Ware (Workspace Training) – instructional designer and graphic artist
- Jim Vaughan (VCSS) – technical developer and programmer
- Alex Vaughan (VCSS) – assistant programmer and voice-over narrator
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- Gary Eggers – Tarkett Flooring

To see the full list of people involved in the Technical Advisory Group for the original WELL Program Flooring Technology project, please go to the INTAR website and follow the links.

## Graphics

Graphics were drawn by Kath Ware. Many of these graphics are based on line drawings or photographs from installation manuals published by the following flooring manufacturers:

- Armstrong: <http://www.armstrong.com/flooring/guaranteed-installation-systems.html>
- Forbo: <http://www.forbo-flooring.com.au/Commercial-flooring/Support-installation-and-maintenance/Installation/Installation-technique/>
- Tarkett: [http://professionals.tarkett.com.au/commdocu?field\\_docu\\_type\\_value=Installation+guide](http://professionals.tarkett.com.au/commdocu?field_docu_type_value=Installation+guide)

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## Introduction

You may have heard the saying: *Prior Preparation Prevents Poor Performance.*

Professional flooring installers know that careful planning and preparation help to make a job run like clockwork. This lets you work efficiently, finish on time, and keep everyone happy.

Every installation job actually starts back at the warehouse, where you think through the requirements of the job and get everything organised for the on-site work.

These preparations include assembling the correct materials and equipment, and cross-checking all the details.



In this unit, we'll look at the main warehouse preparations. We'll also follow through to the on-site tasks of unloading, handling and storing the materials. In particular, we'll discuss the important task of acclimatising the floor coverings to the surrounding conditions, so they're ready for installation.

### Completing this unit



There are six lessons in this unit:

- *Documentation*
- *Materials and equipment*
- *General health and safety*
- *Looking after your body*
- *On-site storage and handling*
- *Conditioning.*

These lessons will provide you with background information relevant to the assignment and the practical demonstration requirements.

## **Assignment**

Your trainer may ask you to submit the assignment as part of your assessment evidence for the unit. You will find a hard-copy template in the separate workbook.

An electronic 'Word' template of the assignment is available on the website for this resource, at: [www.intar.com.au](http://www.intar.com.au)

## **Learning activities**

Each of the lessons has a learning activity at the end. The Workbook for this unit contains all of the learning activities together with spaces for written answers.

Again, you will find all of the learning activities on the website version of this resource.

## **Practical demonstrations**

Your final assessment of competency in this unit will include various practical demonstrations. To help you get ready for these hands-on assessment activities, see the sample checklist shown in the *Practical demonstrations* section at the back of this Learner guide.

## Documentation

The first step in getting organised for an installation is to pick up the paperwork.

Most companies use a **job sheet** to list the project details, and a **floor covering plan** to show the on-site information needed to carry out the installation.

Let's look at each of these documents more closely.



### Job sheet



The job sheet should include the following information:

- jobsite address and contact details of the person in charge
- brand names and descriptions of the floor coverings to be laid
- details of other products to be used, including underlay, adhesive and trims
- seam placement and other installation details
- subfloor preparation required
- furniture and appliances to be moved
- unusual site conditions or potential problems.

Some of this information is likely to overlap with the floor covering plan, but there are also particulars relating to the specific products used and arrangements that have been made with the client.

### Floor covering plan

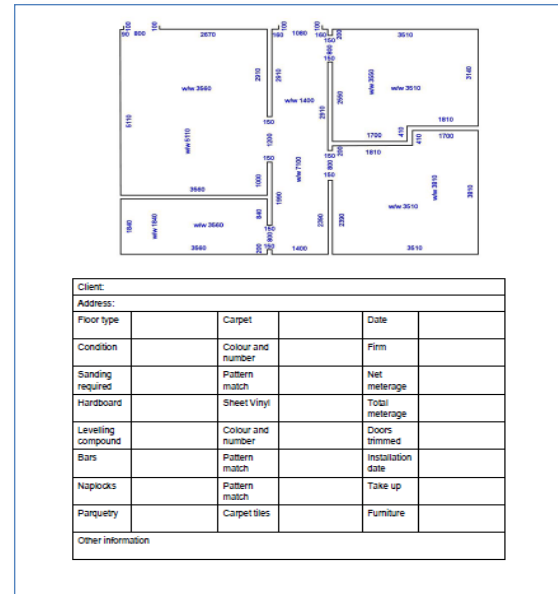
The floor covering plan sets out the details relating to how the flooring will be installed.

Australian Standard 1884 says that the client should be shown a floor covering plan before the installation takes place. This allows them to confirm that they're happy with it or ask for specific changes to be made before it's too late.



The floor covering plan consists of a proportional sketch or scale drawing of the floor area, together with the following information:

- specifications of the covering and underlay to be installed
- positioning of seams and joins
- direction of the pile, if carpet is being laid
- types of accessories to be used
- subfloor preparations required
- any special features of the job.



For more details about these documents, see:

‘Floor covering plans’ in the unit: *Planning and costing*.

### Learning activity



What sorts of documents do you take with you to the jobsite?

Name each document and list its purpose.

## Materials and equipment

It's important to carefully check the items listed on the job sheet against the actual materials and accessories you're putting together for the job.

This includes correctly matching up brand names, colours, quantities, and batch numbers, where appropriate.

While you're selecting the goods, you should also look at the quality of each item and make sure there's no damage or blemishes that could cause problems out at the jobsite.



It's much easier to solve these sorts of issues while you're still at the warehouse!

### Organising tools

Selecting the right tools and equipment for the job takes some thinking ahead. Use the job sheet as a guide and mentally go through the installation process while you're getting the gear ready.

Some installers make up a list of tools on a piece of plywood or particleboard so they can use it as a permanent checklist. If you put a piece of masking tape down one side, you can tick off each item as you pack it. When you return, you can tear off the masking tape and replace it with a new piece, ready for the next job.

### Tagged power tools



Don't forget that all power tools used on building sites need to be tested and tagged every three months by an authorised person.

The test is designed to ensure that the tools are safe and not likely to cause a fire or electric shock.

Once a piece of equipment has been tested and passed, the authorised person attaches a tag to it, stating their name or company they work for and the test date.

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If a power tool is faulty, or the tag is out of date, make sure you take it to the person responsible for getting it fixed.

### ***Learning activity***



The only way you can be sure that your tools will work properly on-site and not let you down is to check them before you leave. Some tools need more maintenance than others.

Some also have parts that are designed to be replaced when they wear out or go blunt. This means that you need to keep spare parts with you at all times, so you can quickly change them over while you're working.

Name two tools that require replacement parts to be carried with them. Also name the parts that you need to keep on hand.



## General health and safety

There are lots of on-site safety requirements that you need to think about before you set off for the jobsite.

Large commercial projects have more safety requirements than small domestic jobs, particularly if they involve multi-storey construction.

For example, you may have to wear a hard hat and high visibility clothing just to enter the site. You might also have to present a range of documents to the site manager before you can start work.

But even in someone's home, you still need to wear appropriate PPE and follow safe work practices.

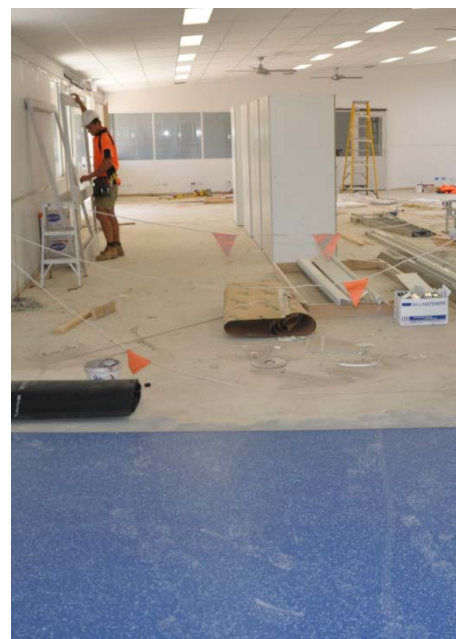


The main differences are that you're not being monitored by a site safety officer and you don't have to worry as much about other workers in the area.

Below are the sorts of questions you should ask yourself when you're getting ready for a jobsite. The size of the project will be a factor in how you answer the questions.

### Questions to ask yourself

- Will I need to take any signage to indicate where the team is while we're working?
- Have all team members been inducted and received authorisation to come on-site?
- Do all team members have a White Card?
- Have the necessary documents been completed and signed off, such as the Safe Work Method Statement (SWMS) and any relevant Safe Operating Procedures (SOPs)?
- Are there Material Safety Data Sheets (MSDSs) on hand for all chemicals and hazardous substances being taken to the site?
- Have all electrical tools been tested and



tagged?

- Will there be a first aid kit on-site, or am I responsible for taking one myself?
- Will there be a fire extinguisher on-site, or should I take one myself?
- Does there need to be a qualified first-aider on-site at all times?

### **Learning activity**



We talked about the different types of safety documentation in the unit: *Safety at work*. Can you remember what their purpose is?

Briefly describe what each of the following documents is designed for:

- White Card
- Safe Operating Procedure (SOP)
- Safe Work Method Statement (SWMS)
- Material Safety Data Sheet (MSDS).



## Looking after your body

Moving rolls of flooring and other heavy objects around can be back breaking work if you don't do it properly.

It can also cause other injuries, such as muscle or joint strains in your legs, shoulders and arms.

Below are some hints on how to avoid manual handling injuries while you're moving heavy items around the jobsite.

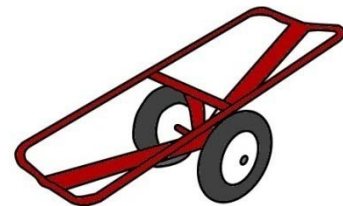


### Mechanical aids

Fortunately, there are various mechanical devices suitable for use on the job. Although they have names like 'carpet cart' and 'linoleum dolly', you can use them to carry any similar item, of course – they're not just designed for that product.

#### Carpet cart

Carpet carts come in different shapes and sizes. They generally have large pneumatic tyres so you can easily roll them across gravel driveways and over curbs.



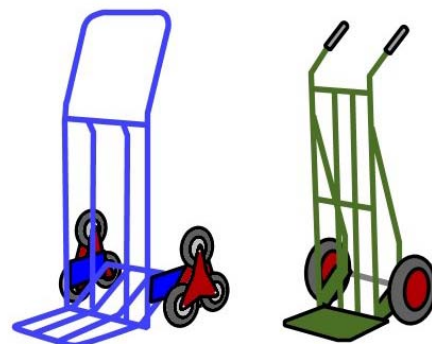
#### Linoleum dolly



These dollies are designed for rolling out sheet vinyl and linoleum products on a floor. The rollers run on ball bearings so that the flooring can turn while the sheet is being pulled out.

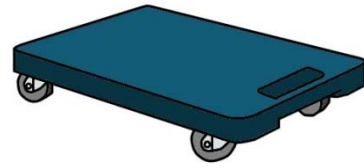
#### Hand truck

Hand trucks are sometimes called hand 'trolleys'. When they have a cluster of wheels on each side they are called 'stair walkers' or 'stair climbers'.

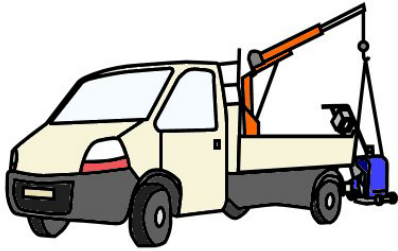


## Tile dolly

A tile dolly is basically a platform with wheels underneath. It can be used to hold boxes of tiles or other heavy items that need to be pushed around the floor.



## Loading crane



Vehicle mounted loading cranes are handy when you have to take large machines to the jobsite on the back of your truck.

It's important to use the machine's built-in lifting hooks in order to maintain its balance and avoid any damage.

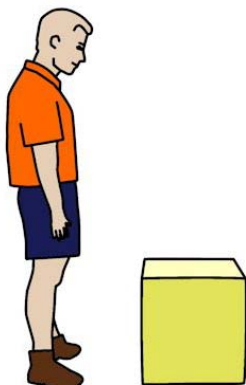
## Ramps

Another way to load and unload heavy machines is to use ramps.

Grinding and polishing contractors generally have a winch inside their vehicle, which is used to pull the equipment up the ramps while they balance the machine from behind.



## Carrying items by hand



Even with the aid of mechanical devices, you still need to use good manual handling practices while you're lifting materials into position.

There are also many times when the only practical way to take items to the installation area is to physically carry them.

Below are some hints on carrying items by hand.

## Heavy or awkward loads



To lift and carry an awkward or heavy object:

1. Size up the load and decide whether you'll need help.
2. Check the path you'll be taking to make sure there are no obstacles in the way.
3. Place your feet firmly on the ground and put your body in a balanced position.
4. Bend your knees to get down to the load, and keep your back as straight as possible.
5. Use your legs to do the lifting as you stand up straight.
6. Keep the load close to your body while you're carrying it.



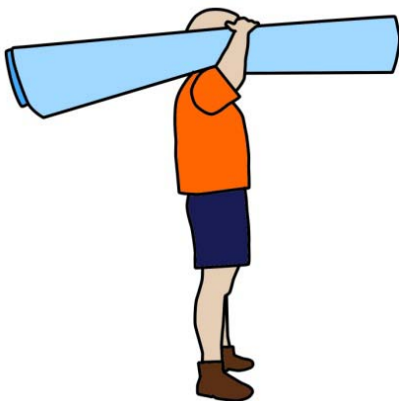
To put the object down again, use the same procedure as for picking it up – keep your body well balanced and use your legs, not your back.

Also remember that while your joints and muscles are under strain, you should avoid twisting your back.

If you need to change direction while you're picking up, carrying or putting down a load, swivel on your feet so that your whole body moves in the same direction.



## Rolls of floor coverings



When you're lifting and carrying a roll of carpet or resilient flooring, the basic principles are the same – keep your back as straight as possible and your body in a balanced position.

However, this time you should support the middle of the roll on your shoulder.

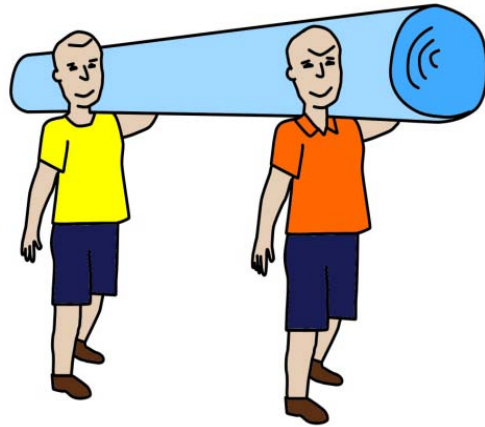
If the roll is long or heavy, or if you need to manoeuvre it around awkward hallways or up stairs, it's best to get an offsider to help.

But remember, if you're lifting and carrying carpet with an offside, good communication is vitally important. You both need to work in unison and know exactly what the other person is about to do.

### Carrying a roll with two people

Here are some hints on how to carry a long roll with another person.

1. Check that your offsideer doesn't have any back or muscle injuries that might affect the work you're about to do.
2. Talk through the process. State which side you are going to stand on, what path you'll take, where you're going to put it, and how you'll deal with any obstacles or corners on the way.
3. Lift the roll together. You might even want to lift on the count of three: '1, 2, 3, lift.'
4. When you get to the destination, count: '1, 2, 3, drop', and both tilt your shoulders at the same time to let the roll drop to the floor.
5. If at any time you're not comfortable or the roll is too heavy, call out 'Stop' and do the '1, 2, 3, drop' procedure together. Don't let go of your end unexpectedly, because it could jar the other person.



### Learning activity



Some installers like to do stretching exercises before they start any heavy work, particularly if they haven't warmed up yet or they're nursing an old injury.

There are lots stretches and warm up exercises you could do. If you are a swimmer or play sport on weekends you may already be doing these sorts of activities.

See if you can think of a couple of examples suitable for a floor layer about to unload and carry heavy rolls of flooring into the installation area. Describe the exercises and the benefit they would give you.

## On-site storage and handling

When the materials are delivered to site, it's important that they're put in a safe place so they won't get damaged.

They should also be stored under conditions that will let them **acclimatise** to the temperature and humidity of the room they're going to be installed in. We'll talk more about 'acclimatisation' in the next lesson.



Rolls that are 3 metres wide or more need to be laid down flat on a smooth level surface that supports the entire length of the roll. Make sure there are no objects under the roll that might damage the material or cause pressure marks.

Rolls that are 2 metres wide or less should be stood on end and secured so they won't fall over. Check that the labels are turned forward so you can read the pattern numbers and dye lots easily.



Cartons of tiles should also be handled carefully. Use a trolley to move them around the floor.

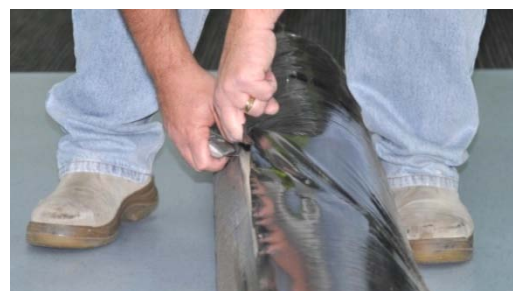
Only stack them as high as recommended by the manufacturer, and stack the boxes squarely one on top of another.

This will help to protect the edges of the tiles underneath from damage or curling. Like rolls, tiles should be stored on a flat, level surface – otherwise they can distort and end up with a permanent change in their shape.

### Opening a roll

To open a roll, insert a hook knife through the paper packing between the first lap of material and the next layer.

The hook knife will avoid damage to the surface of the material.





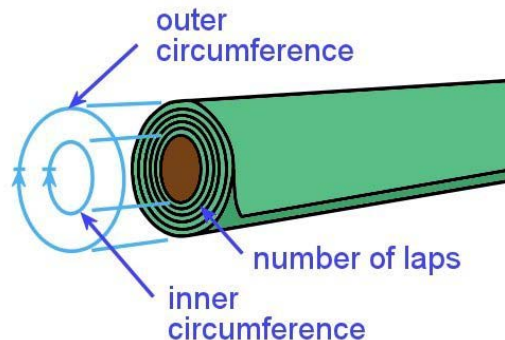
Clean the area thoroughly where you plan to roll out the sheet. Even a small stone or metal shaving can embed into the material.

## Estimating the length of a roll

If you're handling an unopened roll of flooring, the length should be printed on a tag on the packaging. But if the packaging has been removed, or you're using an opened roll, there may not be an indication of the length marked on it.

Here a little trick for estimating the length of a roll without having to lay out the flooring:

1. Measure the outer circumference and the inner circumference of the roll.
2. Add the two measurements together.
3. Divide by 2.
4. Multiply the answer by the number of laps in the roll.



The circumference of a circle is the distance around the outside. To measure it, you can simply wrap your tape measure around it.

Let's take an example, to see how this formula works:

If the outer circumference of a roll of sheet vinyl is 750 mm, the inner circumference is 350 mm and there are 65 laps, how long is the sheet?

$$750 + 350 = 1100$$

$$1100 \div 2 = 550$$

$$550 \times 65 \text{ laps} = 35.75 \text{ metres}$$

Note that we've converted the answer from millimetres to metres. If you've forgotten how to do this with the decimal point, go to the unit *Making measurements* and revise the lesson: 'The metric system'.

## Learning activity



Try out the estimation rule of thumb for yourself.

Find a roll of sheet material and carry out the calculation. Then unroll the material and take an actual measurement of the length.

How close was your estimate?

## Conditioning

Before you begin an installation, you need to let the floor covering **condition** – or ‘acclimatise’ – to the surrounding temperature and humidity in the room.

AS 1884-2012 says that the conditioning process should take place for at least 24 hours, or until the product has achieved an ‘ambient room temperature’ range of between 15° and 28° C.



If the room temperature is below 15°, you should use a heater, blower or air conditioner to raise the temperature. In these circumstances the temperature must be kept under control for the duration of the installation, plus another 48 hours after it's finished.



Note that air conditioners tend to lower the air humidity, which is why AS 1884 says that conditioning units must be set to their expected operating temperature and run continuously for at least 7 days before the underlay or floor coverings are laid on the subfloor.

Again, the air conditioner should be left on throughout the installation process and for another 48 hours after that.

Keep in mind, too, that if the room temperature is less than 15°, the subfloor itself could be below 10°.

This may have an effect on the adhesive's performance and curing time, so you should always check the manufacturer's installation guide to see whether there are special instructions that apply.

To let tiles or planks condition, take them out the box and spread them on the floor. This will allow the air to get to all of the pieces.



## Heated floors

Some floors have heating elements in or under the subfloor. You have to be careful with these floors and use the right type of covering, adhesive and installation process. The product manufacturers will list the requirements in their specifications.



Heating units must be turned on at least 7 days in advance, and then turned off 48 hours before you begin the installation.

This is designed to give the subfloor time to return to the recommended temperature range for the installation.

When the installation is finished, you should leave the heating units off for another 48 hours while the adhesive sets, and then only turn it up at 2° increments per day until it reaches a maximum temperature of 28° C.

You should also avoid reaching this maximum temperature until at least 7 days have elapsed.

### Learning activity



The link below will take you to a clip produced by Forbo Flooring called 'Forbo general jobsite conditions video'.

<http://www.youtube.com/watch?v=o89QR8fYno4>

Watch the clip and answer the following questions:

- How long does Forbo recommend that the HVAC (heating, ventilation, air conditioning) system be left running – both before and after the floor covering is laid?
- In the sequence of trades undertaking work on the jobsite, where should floor laying be?



## Assignment

Go to the Workbook for this unit to write your answers to the questions shown below. If you prefer to answer the questions electronically, go to the website version and download the Word document template for this assignment.

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Select two job sheets for separate installation projects. They should represent different types of floor covering material and different job types – such as one domestic and one commercial job.

Your trainer may ask you to use job sheets from installations you have carried out at work, or may give you job sheets specifically for this assignment.

Alternatively, your trainer might decide to integrate the assessment for this unit with two practical installation assessments. In this case, the job sheets you use will relate to the actual floor laying tasks you are about to demonstrate.

For each project, answer the following questions.

1. Describe the installation project and state the type of floor covering used.
2. What is the process for checking that the materials you are loading up in the warehouse are correct in terms of product type, quantity, etc? What would you do if any of the materials were incorrect, or if there was any damage that might cause problems on-site?
3. What is the most efficient method for unloading the materials from your vehicle and taking them to the installation area? For example, will you need mechanical aids or an offsider?
4. What sorts of damage do you need to protect the materials from on this type of jobsite? Name two possible types of damage and the methods you would use to ensure it doesn't occur.
5. What are the acclimatisation instructions for the floor covering? List the instructions specified by the manufacturer that are relevant to this jobsite.

## Practical demonstrations

The checklist below sets out the sorts of things your trainer will be looking for when you undertake the practical demonstrations for this unit. Make sure you talk to your trainer or supervisor about any of the details that you don't understand, or aren't ready to demonstrate, before the assessment event is organised. This will give you time to get the hang of the tasks you will need to perform, so that you'll feel more confident when the time comes to be assessed.

When you are able to tick all of the YES boxes below you will be ready to carry out the practical demonstration component of this unit.

<b>Specific performance evidence</b>	<b>YES</b>
Prepare, package, protect, transport, load and unload floor coverings and other materials	<input type="checkbox"/>
Use mechanical devices to assist in loading, lifting and moving materials	<input type="checkbox"/>

<b>General performance evidence</b>	<b>YES</b>
1. Follow all relevant WHS laws and regulations, and company policies and procedures	<input type="checkbox"/>
2. Identify the floor covering materials required from work orders	<input type="checkbox"/>
3. Read and interpret relevant work plans, instructions and product information	<input type="checkbox"/>
4. Confirm safety and security conditions at the site from reports or on-site inspection	<input type="checkbox"/>
5. Determine delivery point, access and storage areas and loading/unloading methods	<input type="checkbox"/>
6. Determine size, shape and special packaging requirements of materials	<input type="checkbox"/>
7. Select the correct tools and equipment, and carry out all necessary pre-start checks	<input type="checkbox"/>
8. Receive materials at the warehouse and check them off against delivery docket	<input type="checkbox"/>
9. Inspect materials for defects or damage and complete delivery documentation	<input type="checkbox"/>

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10. Prepare materials for transportation to the work site, including measuring and cutting floor covering material to size, where required	<input type="checkbox"/>
11. Determine the unloading and lifting requirements for receiving the materials at the worksite, including equipment and personnel needed and estimated time it will take	<input type="checkbox"/>
12. Unload materials at work site using safe work practices and appropriate equipment	<input type="checkbox"/>
13. Check materials for damage and store them safely and securely on-site	<input type="checkbox"/>
14. Set up site and materials for acclimatisation process, where required	<input type="checkbox"/>
15. Clean up and store or recycle packing materials	<input type="checkbox"/>
16. Clean and store tools and equipment appropriately	<input type="checkbox"/>
17. Clean up work area and dispose of rubbish properly	<input type="checkbox"/>
18. Accurately complete all required documentation	<input type="checkbox"/>