

National Certificate in Building, Construction, and Allied Trades Skills (BCATS)
Teacher Information & Resources

**Demonstrate knowledge of
construction and manufacturing
materials used in BCATS projects**

Unit Standard – 24355

Level 1, Credit 4





Teaching and assessment tips

Intent – The intent of the unit standard is that the learner is able to:

- select construction and manufacturing materials for a project.

They can

- describe the properties of the materials selected and
- evaluate whether they are suitable for the task.

Unit standard interpretation

You may take a wide view of “materials” when approaching this unit. For example it is acceptable that leather, paua shell and flax may be materials used as finishing, jointing or decorative elements in a project.

For this unit we would encourage you to use a practical project that your student is completing as part of the BConstructive programme. However, this unit does not strictly require that a “project” must be built or constructed.

Assessment can be by using a verified copy of the learner’s Assessment Record sheet. Such a sheet is included in the resources as a means of how evidence for the unit standard can be collected. It is provided in Microsoft Word format so that you can adapt it to suit your programme and to give students more room to write.

Alternatively if you are taking a design process (design brief) approach in your programme this may form part of the assessment as it will contain consideration of the use of 4 materials. If you use this design process (design brief) approach then copies of the relevant sections must be attached to the Assessment Record sheet.

Assessment



Assessment of this unit standard consists of:

- A verified, (by you) student prepared, design project analysis that considers the use of 4 materials (1 of which must be timber). OR
- Completion of the Assessment Record sheet for materials

Examples of oral assessment questions

1. Explain the difference between exotic and imported timbers.

Exotic timbers are native to another country but are grown in New Zealand.

Imported timbers are grown in another country and the timber is imported into New Zealand.

2. Describe what will happen to MDF if it is exposed to a damp or wet environment.

It will swell and crumble.

3. Identify a strong and stable manufactured board that is commonly used in construction. It is made out of timber veneers.

Plywood.

4. Identify two materials that boat hulls are commonly made out of.

Fibreglass.

Aluminium.

Steel.

Plywood.

In some cases, Concrete.

5. Identify two metals that are known for their corrosion resistant properties

Stainless steel, Aluminium, Brass, Copper, Bronze

6. Identify three methods of joining two pieces of flat mild steel bar together.

Welding.

Riveting.

Screwing.

Bolting.

Gluing.

7. Identify three methods that are commonly used to apply a paint finish.

Brush.

Roller.

Spray painting.

8. Describe what would happen if PVA glue was used in an outdoor environment

The glue would dissolve when wet. The glue's joint would fall apart after a short period of time being exposed to the elements.

9. Why should flat headed nails be used on softer timber such as radiata pine

The flat head is less likely to be pulled through the timber than a normal jolt head nail. This will increase the strength of the joint.

Assessment Schedule

US 24355 Demonstrate knowledge of construction and manufacturing materials used in BCATS projects (Level 1, Credit 4)

| Outcome 1 | Establish job requirements and select construction and manufacturing materials for a BCATS project. | Assessment evidence and judgement |
|-----------|---|---|
| ER 1.1 | Job requirements for the project are identified from job specifications. | Evidence gathered from BCAT's design project analysis showing; <ul style="list-style-type: none"> • Instructions for practical project are read and/or listened to. • Job requirements can be described. |
| ER 1.2 | Materials are selected in accordance with the project requirements. | Evidence gathered from BCAT's design project analysis showing; <ul style="list-style-type: none"> • Appropriate materials for practical project selected. |
| Outcome 2 | Describe the properties of selected materials and evaluate their suitability to meet job requirements. Range: four materials, one of which must be a timber. | Assessment evidence and judgement |
| ER 2.1 | The properties of selected materials are described. | Evidence gathered from BCATS design project analysis OR assessment record sheet showing; <ul style="list-style-type: none"> • Appearance, working qualities, strength, and structural stability of four different materials selected for practical project (including timber) are described. |
| ER 2.2 | The purpose of selected materials is described in accordance with project requirements. | Evidence gathered from BCATS design project analysis OR assessment record sheet showing; <ul style="list-style-type: none"> • Description of four different materials selected for practical project (including timber). |
| ER 2.3 | Factors influencing the selection of materials are described. Range: three of – design, aesthetics, ergonomics, cost, availability, jointing methods, durability, health and safety requirements. | Evidence gathered from BCATS design project analysis OR assessment record sheet showing; <ul style="list-style-type: none"> • Reasons for selecting materials for practical project (including timber) are described – reasons must include 3 of - design, aesthetics, ergonomics, cost, availability, jointing methods, durability, health and safety requirements. |
| ER 2.4 | The properties and qualities are compared and evaluated between the selected, and alternative, materials. | Evidence gathered from BCATS design project analysis OR assessment record sheet showing; <ul style="list-style-type: none"> • Properties and qualities of each of four different materials chosen for practical project (including timber) and an alternative material are compared and evaluated. |
| ER 2.5 | Reasons for choosing the selected materials are described. | Evidence gathered from BCATS design project analysis OR assessment record sheet showing; <ul style="list-style-type: none"> • Reasons for choice of four different materials for practical project (including timber) are described. |