

HSC 2002 – Industrial Technology

Selection and Justification of Components, Processes and Other Resources

Band 4/5

Describes and justifies the selection and use of appropriate materials, components, processes, including industrial processes and equipment, and other resources.

Justification of Components

| Components | Options | Choice | Justification |
|---------------------------------------|---|--------------------------|---|
| Component A- Upper case | | | |
| Vertical Side Rails | Tongue and Groove Joints Biscuit and glue joints Dowel and Glue Joints Single Dovetail and Glue Joints | Biscuit and Glue Joints | Biscuit Joints provide a desired smooth and flat appearance of joined timber. Looks as if only one board is being used. Fairly strong |
| Horizontal Rails/ Shelving and Top | Tongue and Groove Joints Biscuit and glue joints Dowel and Glue Joints Single Dovetail and Glue Joints | Biscuit and glue joints | Biscuit Joints provide a desired smooth and flat appearance of joined timber. Looks as if only one board is being used. Fairly strong |
| Top Shelf Support | Housing Joints Stopped Housing Joints Butt Joints Rebate Joints Dowel Joints | Rebate Joints | Show machining skills. Is fast to construct which will help in completing the project by the due date. |
| Horizontal Rails Shelf Support | Housing Joints Stopped Housing Joints Butt Joints Rebate Joints Dowel Joints | Housing Joints | Show machining skills. Is fast to construct. Provides an amount of strength and support. |
| Extended Top and Base | Tongue and Groove Joints Biscuit and glue joints Dowel and Glue Joints Single Dovetail and Glue Joints | Biscuit and glue joints | Biscuit Joints provide a desired smooth and flat appearance of joined timber. Looks as if only one board is being used. Fairly strong |
| Joining Base to Vertical Rails | Mortise and Tenon Joints Housing Joints Dowel Joints Butt, Glue and Screws Joint | Mortise and Tenon Joints | Shows machining skills. Used to hide joint in which timber will fit into. Used as timber was warped. This can't be seen as much with this joint |

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| Component D- Upper and Lower Doors | | | |
|---|---|--------------------------|---|
| Upper Doors | Dowel and Glue Joint Mitre Joint Tongued and Trenched Joint Butt and Glue Joint Mortise and Tenon | Dowel and Glue Joints | Provides strength. Gives the appearance of a butt joint on all sides. Looks good and is reasonably fast to construct |
| Lower Doors | Dowel and Glue Joint Mitre Joint Tongued and Trenched Joint Butt and Glue Joint Mortise and Tenon | Dowel and Glue Joints | Provides strength. Gives the appearance of a butt joint on all sides. Looks good and is reasonably fast to construct |
| Material Support in Doors | Rebate Joint and Tacking Housing Joint Timber Tacking | Rebate Joint and Tacking | Material insert can be removed if it needs to be. Method can be performed once doors have been constructed, therefore less cuts are required. |
| Component E- Inlay Features | | | |
| Housing of Inlay | Housing Joint | Housing Joint | Most effective joint for straight inlay. Provides strength and support. |
| Joining of Inlay | Mitre Joint Butt Joint | Mitre Joint | Looks good and provides an additional skill. Reasonably strong. |

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Processes

| Components | Options | Choice | Justification |
|--|---|------------------------------|--|
| Making Side Edges True | Band Saw and Fence Jig Saw and Fence Portable Router and Fence Hand Plane Electric Plane | Electric Plane | Requires skill. Is reasonably efficient. |
| Conversion of Timber to Width | Table Saw Portable Circular Saw Jig Saw and Fence Band Saw and Fence | Table Saw | Efficient. Made to cut wider boards. |
| Conversion of Timber to Length | Band Saw Drop Saw Jig Saw Portable Circular Saw Table Saw | Band Saw | Cuts wider boards. Provides a reasonably accurate cut, which can be finished using the belt sander. |
| Joining Top to Vertical Side Rails/Rebate Joints of Component A | Portable Router and Fence Router and table Table Saw, Chisel and Mallet Tenon Saw, Chisel and Mallet Circular saw and Fence | Table Saw, Chisel and Mallet | Shows machine and chiseling skills. Reasonably efficient method. Provides an accurate rebate joint. |
| Joining Horizontal rails or Shelving to Vertical Side Rails/Housed Joints of Component A | Portable Router and Fence Router and table Table Saw, Chisel and Mallet Tenon Saw, Chisel and Mallet Circular saw and Fence | Table Saw, Chisel and Mallet | Shows machine and chiseling skills. Reasonably efficient method. Provides an accurate housing joint. |
| Joining Main Case to Base/Mortise and Tenon Joint | Portable Router and Fence Router and table Table Saw and Fence | Portable Router and Fence | Shows machining skills. Most efficient method. |

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Materials

| Components | Options | Choice | Justification |
|----------------------------|--|--|--|
| Timber Choice | Baltic Pine Huon Pine Radiata Pine Kauri Pine Hoop Pine | Hoop Pine | Hoop Pine is to be used, as it is light and strong. It will blend in with currently owned furniture in my bedroom and is regarded as one of the easiest pines to work with. It is reasonably well priced and looks and will finish well. |
| Door Inserts | Glass Punched Metal Sheeting Timber Lattice Timber Strips Speaker Material 3-Ply, Ply Wood | Punched Metal Sheeting | It is a <i>breathable material</i> , therefore sound from stereo system will be able to be heard whilst doors of the cabinet are closed. Looks good and gives a <i>modern appearance</i> . |
| Door/ Drawer Knobs/Handles | Galvanized Steel Rings Pine Knobs Galvanized Steel Handles Brass Knobs Brass Handles Routed Groove in Drawer Face | Galvanized Steel Rings | The steel rings blend in with the punched steel sheeting. The use of rings provides a different, yet modern look. |
| Hinges | Galvanized Steel Brass Silver | Galvanized Steel | Suits overall appearance of <i>cabinet</i> . <i>Blends in with rings and door inserts</i> . |
| Finishes/Stains | Lacquer Clear Estapole Baltic Pine Stain Satin Estapole and Baltic Pine Stain Mix. Cabot's Colonial Baltic Stain | Satin Estapole and Baltic Pine Stain Mix | The mix of products will provide the cabinet to have a Baltic Pine stain that will match other furniture in my bedroom, whilst having the finish of estapole. This should provide a satin finish. |