

Carpentry

TEAM EVENT – 2 people maximum

Purpose

To test a carpentry student's ability to organize and execute a given work load quickly and accurately.

Procedure

1. This is a 2-person Team Event. Each school should register a team of 2 people.
2. The contestants will be identified by number only.
3. The contestants will assemble at the contest site in appropriate dress and with the required tools.
4. The contestants shall be given job sheets explaining the tasks to be performed.
5. This contest is open to carpentry and building construction students.

Rules

1. Rank students - number of contestants will be limited as facilities/equipment permit.
2. The contestants will draw for work stations.
3. Time limits: Contest will be stopped when time limits specified on the contest job sheet are up; however, contestants may stop when they have completed a particular phase of the contest.
4. The dismantling of the project will be considered the final sequence or task of this contest, time permitting.
5. Student Verification Statement and Proof of Training Form must be completed and submitted to the contest coordinator.

Scope of the Contest *could* include:

1. Blueprints and Specifications
 - Interpret building codes
 - Interpret and determine dimensions from multi view drawings
 - Interpret specifications and drawing notes
 - Identify plot plan information such as reference points and bench marks
 - Interpret oral and written changes
 - Understand common abbreviations and symbols
 - Interpret door, window and finish schedules

2. Building Site

- Use builder's level and transit properly for layout and elevation
- Locate and lay out building site properly
- Install batter boards, grade stakes and corner stakes

3. Building Materials

- a. Identify, receive and inspect materials
- b. Store lumber and other materials properly

4. Foundations and Forms

- Construct and align various footing forms to include key ways, bulkheads, dowels and anchorages
- Construct and align foundation wall and wall forms to include pilasters, beam pockets, anchorages, openings, expansion joints and ledges
- Construct and align column and pier forms
- Install anchorages in concrete block walls
- Construct and align screens and forms for concrete flatwork
- Maintain form materials properly

5. Rough Framing

- Identify framing members and select materials
 - Frame and install sill plate, girders, floor joists and bridging
 - Frame floor opening and sub floor
 - Build or erect safe scaffolding
 - Frame and brace walls to include corners, openings, trimmers, cripples, partitions, plumbing partitions, fixture backing, and sheathing
 - Frame stair stringer, horse and other components
 - Lay out story pole for framing
 - Set metal door or window frame in masonry
 - Masonry wall
 - Install underlayment
- ## 6. Roof Framing
- Identify types and components of roof construction
 - Determine rafter lengths from a rafter scale

- Calculate and use the rise and run of a common roof
 - Lay out a common roof plan
 - Lay out, cut and install common rafters, ridge board, collar ties, gambrel rafters, valley rafters, valley jack rafters, tail rafters, hip rafters, hip jack rafters and cripple jack rafters
 - Frame roof openings, dormers and saddles
 - Build roof trusses; and lay out, cut and install purloins
 - Install roof sheathing
7. Exterior Finish
- Construct, install and trim window and door frames
 - Install corner boards, molding or metal corners
 - Install wood bevel and lap siding and aluminum or vinyl siding
 - Install wood shingles and miter corners
 - Finish rake, open cornice, box cornice and porch cornice
 - Install finished columns, beams and wrought-iron fixtures
8. Interior Finish
- Install wallboard layment and drywall
 - Cut and install paneling and trim
 - Fit and hang doors and trim to include swinging, sliding, folding and pocket doors
 - Construct closets and built-in units and install accessories
 - Install mantels, medicine cabinets, corner cabinets and prefabricated kitchen cabinets
 - Install door and window hardware
 - Install various floor finishes and trim
9. Stairs
- Lay out a straight run stringer and two-flight stringer set with landing using a carpenter square
 - Calculate rise, run and tread width
 - Cut and install stair treads and stair skirt
10. Lumber
- Match types of softwood lumber to their grades
 - Match letters designating veneers used in fir plywood to their current descriptions
 - Select from a list, standard common grades or fir plywood by face veneer

- Select from a list, standard hardwood lumber grades
- Match standard hardwood plywood grades to their descriptions
- Match common hardwoods and softwoods to their uses
- Identify types of trim and moldings
- Identify common defects in lumber
- Write a requisition for ordering lumber
- Compute board feet

11. Tools - Safely use and maintain the following hand tools:

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|-----------------------|-----------------|-------------|----------------------|
| a. Hand brace and bit | e. Doweling jib | i. Hammer | m. Wood chisel |
| b. Sliding T-bevel | f. Coping saw | j. Punch | n. Carpenter's level |
| c. Tape measure | g. Keyhole saw | k. Hand saw | o. Framing square |
| d. Combination square | h. Folding rule | l. Nail set | p. Hand plane |

All teams need to bring:

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|----------------|--------------|------------|----------------|--------|
| Safety Glasses | Level | Calculator | Framing Square | Pencil |
| Ear Protection | Circular Saw | Hard Hat | Tape Measure | |