2026 CONSTRUCTION TRADES

Program Standards

CONTENT STANDARD 1.0: PROFESSIONAL ORGANIZATIONS AND LEADERSHIP	
Performance Standard 1.1: Student Leadership in Career Technical Student Organizations (CTSO) and Professional Associations	
1.1.1	Explore the role of professional organizations and/or associations in the Construction Industry.
1.1.2	Define the values, roles, and opportunities provided through career technical student organizations.
1.1.3	Engage in career exploration and leadership development.
CONTENT STANDARD 2.0: INDUSTRY SKILLS AND HABITS	
Performance Standard 2.1: General Safety	
2.1.1	Describe general shop safety rules, procedures and housekeeping duties.
2.1.2	Describe the roles of the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) pertaining to workplace safety.
2.1.3	Describe the requirements for using personal protective equipment (PPE) during work activities, including safety glasses, ear protection, gloves, and shoes.
2.1.4	Wear appropriate clothing for lab/shop activities.
2.1.5	Secure hair and jewelry for lab/shop activities.
2.1.6	Demonstrate safe and proper techniques for using hand tools.
2.1.7	Demonstrate safe and proper techniques for using power tools and machinery.
2.1.8	Describe proper lifting procedures and proper use of support equipment.
2.1.9	Describe ventilation requirements for working within the lab/shop area.
2.1.10	Describe the location and procedures for using types of fire extinguishers and other fire safety equipment.
2.1.11	Identify the location and procedures for using eyewash stations.
2.1.12	Identify the location of the posted building diagram for evacuation routes.
2.1.13	Identify the location of safety data sheets (SDS) and the information they contain.
2.1.14	Complete work assignments, following verbal and written instructions.
2.1.15	Complete OSHA–10 safety course.
Performance Standard 2.2: Building Codes	
2.2.1	Interpret sections of the building codes.
2.2.2	Describe the importance of complying with building code requirements. (e.g. residential vs commercial, Americans with Disabilities Act [ADA]).
2.2.3	Match activities on a job schedule with required inspections.
2.2.4	Identify required building permits, based on construction project.
CONTENT STANDARD 3.0: BUILDING MATERIALS	
Performance Standard 3.1: Lumber	
3.1.1	Select characteristics to consider when selecting lumber for construction projects.
3.1.2	Identify common defects in lumber.
3.1.3	Identify standard lumber grades and suitability for construction projects.
3.1.4	Translate nominal lumber dimensions into actual (i.e., true) measurements.
Performance Standard 3.2: Plywood	
3.2.1	Identify letters designating veneers used in plywood.
3.2.2	Distinguish between standard interior and exterior plywood grades.
Performance Standard 3.3: Millwork	
3.3.1	Identify solid softwoods and hardwoods, used in millwork.

3.3.2 Identify types of woods used for trim and moldings.

Performance Standard 3.4: Insulation and Vapor Barriers

3.4.1 Describe the functions of insulation.
3.4.2 Describe R-values.
3.4.3 List types of insulation commonly used in construction.
3.4.4 List areas where insulation should be used in construction.
3.4.5 List factors that determine the amount of insulation needed for walls, ceilings, and floors.
3.4.6 Install insulation.

CONTENT STANDARD 4.0: MATH AND MEASUREMENT SKILLS

Performance Standard 4.1: Mathematical Concepts

4.1.1 Add, subtract, multiply, and divide whole numbers, fractions, and decimals with and without a calculator.
4.1.2 Convert decimals to percentages, percentages to decimals, fractions to decimals, and decimals to fractions.
4.1.3 Convert between customary and metric systems.
4.1.4 Describe methods for measuring volume and area, using geometric principles.
4.1.5 Calculate standard and metric units of length, weight, volume, and temperature.
4.1.6 Calculate board feet, square feet, linear feet, arcs, and angles.

Performance Standard 4.2: Measuring Operations

4.2.1 Transfer measurements to materials.
4.2.2 Identify basic measuring tools used by carpenters (e.g. tape measures, framing squares, speed squares).
4.2.3 Convert fractional inches to hundredths of a foot.
4.2.4 Read measurements on tape measures.
4.2.5 Lay out the perimeter of a building, using basic measuring tools and the 3-4-5 method.

CONTENT STANDARD 5.0: BLUEPRINT READING AND DRAWING SKILLS

Performance Standard 5.1: Blueprint Reading

5.1.1 Identify types of drawings usually included in a set of plans.
5.1.2 List information found on types of drawings in a set of plans.
5.1.3 Identify selected symbols commonly used on plans.
5.1.4 Identify selected abbreviations commonly used on plans.
5.1.5 Describe written specifications (e.g. general notes, detail pages).
5.1.6 Compare the architect's scale to the engineer’s scale.
5.1.7 Interpret a finish schedule.

CONTENT STANDARD 6.0: HAND AND POWER TOOLS

Performance Standard 6.1: Common Carpentry Hand Tools

6.1.1 Match carpentry hand tools to their uses.
6.1.2 Describe maintenance needs and safe use of carpentry hand tools.

Performance Standard 6.2: Power Tools

6.2.1 Identify power tools.
6.2.2 Describe the general safety rules pertaining to power tools.
6.2.3 Describe maintenance requirements for power tools.
6.2.4 Operate portable and stationary power tools safely.
6.2.5 Describe the guidelines for using pneumatic fasteners safely.
6.2.6 Match saw blades to their uses.
6.2.7 Complete a safety test for specific tools.
6.2.8 Perform rip and miter cut-off operations.
6.2.9 Drill and bore holes.

CONTENT STANDARD 7.0: SITE PREPARATION, CONCRETE FORMS AND FORMING

Performance Standard 7.1: Leveling Instruments

7.1.1 Identify types of levels (e.g. builders, transit, laser).

7.1.2 Describe methods for using various types of levels.
7.1.3 Describe the use of a transit/leveling rod.
7.1.4 Describe the care and maintenance of leveling instruments.
7.1.5 Set up and adjust leveling instruments.
7.1.6 Check elevations, measure angles, and read angles, using leveling instruments.
7.1.7 Establish an elevation from a benchmark.
7.1.8 Locate and square corners.
7.1.9 Mark a story pole for heights (e.g., windows, doors, risers) from a common reference point.
7.1.10 Install batter boards.

Performance Standard 7.2: Concrete Footings and Foundations

7.2.1 Describe the composition of concrete and factors affecting its strength, durability, and workability.
7.2.2 Describe the purpose of using vibrators in concrete.
7.2.3 Describe the types and uses of concrete footings and foundations.
7.2.4 List in order the steps of constructing concrete foundations.
7.2.5 Calculate the cubic yards of concrete needed to pour a structure of a given size.

Performance Standard 7.3: Reinforcing Material

7.3.1 Identify types of reinforcing material used in concrete.
7.3.2 Match common rebar numbers to their diameter sizes.

Performance Standard 7.4: Concrete Forms, Associated Hardware, and Materials

7.4.1 Describe the purpose of forms.
7.4.2 Name types of forms.
7.4.3 Identify hardware and materials used in concrete forms.

CONTENT STANDARD 8.0: FRAMING

Performance Standard 8.1: Floors and Sills

8.1.1 Identify floor and sill framing and support members.
8.1.2 Name methods used to fasten sills and sill insulation to the foundation.
8.1.3 Select types of beams/girders from a list.
8.1.4 Describe the types of floor joists.
8.1.5 Describe the types of subflooring/decking materials.
8.1.6 Identify fasteners used in floor framing.
8.1.7 Attach subfloor/decking to structures, using multiple common methods.
8.1.8 Estimate the amount of material needed to frame a floor assembly.
8.1.9 Lay out a floor system.
8.1.10 Install blocking.
8.1.11 Install subfloor/decking materials.

Performance Standard 8.2: Wall and Partition Members

8.2.1 Describe the function of the wall framing members.
8.2.2 Identify common fasteners used in wall framing.
8.2.3 Describe methods used to construct outside corners of wall frames.
8.2.4 Describe common methods used to construct partition T's.
8.2.5 Identify types of headers.
8.2.6 Calculate the length of headers for rough openings (R.O.).
8.2.7 Calculate R.O. dimensions for doors, windows, and openings.
8.2.8 Calculate the length of trimmers for window and door openings.
8.2.9 List methods used to brace walls.
8.2.10 Calculate the amount of materials required for wall and partition framing.

Performance Standard 8.3: Single-Story Structure Framing

8.3.1 Lay out wall, ceiling, and partition locations.
8.3.2 Cut materials to length (e.g. studs, trimmers, cripples, and headers).

8.3.3 Assemble corners, T's, and headers.
8.3.4 Construct wall sections for a single-story structure.
8.3.5 Erect and brace wall sections for a single-story structure.

Performance Standard 8.4: Metal Framing Systems

8.4.1 Name components of metal stud systems.
8.4.2 Identify fasteners used for metal stud construction.
8.4.3 List tools and equipment used in metal stud construction.
8.4.4 List areas and advantages where metal stud systems are used.

Performance Standard 8.5: Finish Flooring Installation

8.5.1 Estimate the number of 4'x 8' sheets of underlayment needed to floor a room.
8.5.2 Estimate the quantity of finish flooring materials.

CONTENT STANDARD 9.0: ROOF CONSTRUCTION TECHNIQUES

Performance Standard 9.1: Roof Framing Members

9.1.1 Identify the types of roof styles.
9.1.2 Identify roof framing members.
9.1.3 Identify parts of a rafter.
9.1.4 Identify parts of a truss.
9.1.5 Calculate the length of a common rafter.
9.1.6 Identify ventilation needs on a roof system.
9.1.7 Define types of temporary and permanent bracing.

Performance Standard 9.2: Construct a Roof

9.2.1 Estimate material needed to frame a roof.
9.2.2 Lay out rafter/truss locations.
9.2.3 Lay out, cut, and erect rafters for gable roofs.
9.2.4 Apply roof sheathing.
9.2.5 Erect trusses.

Performance Standard 9.3: Gable Ends and Soffits

9.3.1 Identify soffits and gable ends.
9.3.2 Label types of tail-rafter cuts.
9.3.3 List materials used for soffits.
9.3.4 Estimate material needed for gable ends and soffits.
9.3.5 Apply siding to a gable end.

Performance Standard 9.4: Roofing Materials

9.4.1 Identify roofing materials (e.g., venting).
9.4.2 Describe safety rules pertaining to roofing.
9.4.3 Describe procedures for applying roofing materials.

Performance Standard 9.5: Roofing and Flashing Installation

9.5.1 Apply underlayment, flashing, and roofing.
9.5.2 List types of materials used for flashing.
9.5.3 List reasons and procedures for applying starter course of shingles.
9.5.4 Describe procedures for applying shingles with cutouts that break joints in half.
9.5.5 Describe steps for installing flashing at open-valley locations.
9.5.6 Estimate roofing materials needed for a roof.

CONTENT STANDARD 10.0: INTERIOR STAIRCASE CONSTRUCTION

Performance Standard 10.1: Staircases

10.1.1 Identify parts of a staircase.
10.1.2 Identify basic types of stairs.
10.1.3 List factors considered when building a staircase.
10.1.4 Describe state and local code requirements pertaining to stairs.
10.1.5 Calculate number and size of risers and treads for a stair of given dimensions.
10.1.6 Construct stairs.

Performance Standard 10.2: Handrails and Railings

10.2.1 List factors that must be considered when selecting handrails and railings.
10.2.2 Describe state and local code requirements pertaining to handrails and railings.
10.2.3 Estimate materials needed for a handrail or railing.
10.2.4 Determine the fasteners to use with handrails and railings.

CONTENT STANDARD 11.0: SHEATHING, SIDING, AND EXTERIOR BUILDING MATERIALS

Performance Standard 11.1: Wall Sheathing and Siding

11.1.1 Name types of wall sheathing.
11.1.2 Identify styles of siding.
11.1.3 Identify types of exterior moldings and trims.
11.1.4 List recommendations for waterproofing exterior walls.
11.1.5 List advantages and disadvantages of various types of siding.
11.1.6 Name types of materials used for vapor barriers.

Performance Standard 11.2: Wall Sheathing and Siding Installation

11.2.1 Estimate sheathing and siding needed for installation.
11.2.2 Install sheathing.
11.2.3 Install siding.
11.2.4 Install vapor barrier.

CONTENT STANDARD 12.0: WINDOWS, EXTERIOR AND INTERIOR DOORS, AND ASSOCIATED TRIM

Performance Standard 12.1: Windows

12.1.1 Name types, styles, and materials used with windows.
12.1.2 Describe the U-factor.
12.1.3 Describe carpenter considerations for installing windows.
12.1.4 Install various window units.
12.1.5 Seal and flash a window.

Performance Standard 12.2: Prehung Exterior Door Installation

12.2.1 Identify types of entry doors.
12.2.2 Identify parts of an exterior door installation.
12.2.3 List materials used in door construction.
12.2.4 Select from standard sizes of exterior doors.
12.2.5 Determine how an exterior door should swing (i.e., left-hand or right-hand).
12.2.6 Identify hardware used with exterior doors.
12.2.7 Install an exterior prehung door unit (i.e., frame, casing, door, weatherstripping, lock).

Performance Standard 12.3: Interior Door Installation

12.3.1 Define the terms associated with interior doors and trim.
12.3.2 Identify the general types of interior door construction.
12.3.3 Identify types of interior doors.
12.3.4 Identify parts of an interior door unit.
12.3.5 Select from standard sizes of interior doors and jambs.
12.3.6 Determine how an interior door should swing (i.e., left-hand or right-hand).
12.3.7 Identify hardware used with interior doors.
12.3.8 Identify types of interior trim.
12.3.9 Estimate material needed to trim a door.

CONTENT STANDARD 13.0: DRYWALL AND FINISHING

Performance Standard 13.1: Drywall

13.1.1 Name types of drywall.
13.1.2 Select from standard sizes of drywall.
13.1.3 Identify standard corner profile of drywall.
13.1.4 Identify hardware and fasteners used with drywall.
13.1.5 Select from types of finishes that may be applied to drywall.

Performance Standard 13.2: Drywall Installation

13.2.1 Estimate materials needed to drywall a structure.
13.2.2 Install drywall.
13.2.3 Finish drywall joints and depressions.

Performance Standard 13.3: Finishes and Coatings

13.3.1 Identify purpose of finishes and coatings.
13.3.2 Select appropriate coatings and finishes for substrate.
13.3.3 Select tools to apply finishes and coatings.
13.3.4 Describe application methods.
13.3.5 Apply finishes and coatings.

CONTENT STANDARD 14.0: JOB COORDINATION

Performance Standard 14.1: Coordinate with Other Trades

14.1.1 Build a schedule for a construction project.
14.1.2 Identify types of construction workers needed for a construction project.
14.1.3 Identify basic responsibilities of plumbing, electrical, and HVAC personnel in construction projects.
14.1.4 Describe variables that may affect the work of subcontractors.
14.1.5 Identify structural problems that may be caused by other trades.
14.1.6 Describe the importance of orienting knockouts on prefabricated materials.
14.1.7 Describe the importance of nailing directly over studs when doubling top plates.
14.1.8 Describe the reasons that carpenters need to know basic wiring and plumbing practices, especially when remodeling.

IDCTE Document Control Information

Program Standard Revision: TI Construction Trades

Date	Standard #	Original	Summary of Change	Revised By	Approved By