# **CARPENTER INDUSTRY ADVISORY COMMITTEE**

# 2020 Minimum Industry Training Standards

Acoustical
Cabinetmaker
Carpentry
Drywall Applicator
Hardwood Floor Layer
Insulator
Modular Installer
Millwright
Pile Driver
Scaffold Erector
Shingler

# **Industry Training Criteria for Acoustical Installer**

ONET Code: 47-2031-01A

Date: 8/24/2020

Completion rate established at 30%

#### 1. Length of Training

a. Minimum of three years

b. Minimum of 3600 work hours

#### 2. Related Supplemental (Classroom) Instruction

- a. Minimum of 144 hours of Related and Supplemental Instruction per year.
- b. Appendix A: Acoustical Installer related and supplemental instruction

#### 3. On The Job Training

a. Appendix B: Acoustical Installer Work Processes

#### 4. Competency Evaluation

a. All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

 Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 30%.

#### 6. Procedures for the Review and Revision of the Training Criteria

a. The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Acoustical Installer shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### Appendix A: Acoustical Installer Related and Supplemental Instruction

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)
  - First aid and CPR certification
- 2. Basic Skills
  - Trade orientation
  - Construction Mathematics
  - Print reading
  - Layout and leveling instruments
  - Scaffolds
- 3. Hanger Installation
  - Measuring and layout
  - Cutting and fitting
  - Code requirements
- 4. Ceiling Suspension Installation
  - Standard grid patterns
  - Special ceilings and security systems
- 5. Sound Attenuation Systems
- 6. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# **Appendix B: Acoustical Installer Work Processes**

Suggested Minimum On The Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMATE HOURS
A. Scaffolds and Material Handling	700
B. Suspended Ceiling Systems	1300
C. Acoustical Tile and Panel	400
Installation	
D. Layout and Use of Leveling Devices	400
E. Special Application Techniques	500
F. Supplemental Skills and Green Site	Work 300
Total	3600

<sup>\*</sup> These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through F may be combined in different hourly totals to meet the minimum of 3600 hours of on-the-job training.

# The committee has unanimously agreed to submit the Carpenters MITC without revisions.

Submitted	d By: Acoustical Installer Minimum Industr	ry Training Criteria Com	mittee	
Chair:	/s/ Peter O'Farrell	Date:	8/20/20	
Peter O'Fa	arrell, Carpenters Training Committee for	Northern California		
Co-Chair:_	/s/ Pete Saucedo	Date:	9/24/20	
Pete Sauc	edo, San Diego Associated General Contra	actors J.A.C.		

# **Industry Training Criteria for Cabinet Maker**

ONET Code: 51-7011.0

Date: 8/24/2020

#### 1. Length of Training

Minimum of four years
Minimum of 4800 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Cabinet Maker related and supplemental instruction

#### 3. On The Job Training

Appendix B: Cabinet Maker Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Cabinet Maker shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### **Appendix A: Cabinet Maker Related and Supplemental Instruction**

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)/respirators; confined space
  - Material safety data sheets (SDS)
  - First aid and CPR certification
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading
  - Layout and leveling instruments
  - Stock bills and estimating
- 3. Hand and Power Tools
  - Precision measuring and layout
  - Plunge and edge cuts
  - Finishing edges and surfaces
- 4. Milling and Shaping Equipment
  - Materials and cut lists
  - Quality control and productivity
- 5. Cabinet Design Construction
  - Computer aided design (CAD); production work
  - Jigs and fixtures
  - Fitting and assembly
- 6. Installation and Finish Work
  - Layout and alignment
  - Installation sequences and procedures
  - Wood finishes and repairs
- 7. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# **Appendix B: Cabinet Maker Work Processes**

Suggested Minimum on The Job Training (OJT) Hours: \* Includes but not limited to:

wo	RK PROCESS AP	PROXIMATE HOURS
A.	Material Handling and Safety Proce	dures 300
B.	Stationary Machine Operations	500
C.	Bench Work/Assembly	350
D.	Portable Power Tools	500
E.	Sharpening & Use of Hand Tools	1000
F.	Stock Bill and Work Orders	650
G.	Installation procedures	1200
Н.	Supplemental Skills and Green Site	Work 300
Tota	al	4,800

<sup>\*</sup> These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through H may be combined in different hourly totals to meet the minimum of 4800 hours of on-the-job training.

# <u>The committee has unanimously agreed to submit the Cabinet Maker MITC without revisions.</u>

Submitted	By: Cabinet Maker Minimum Industry T	raining Criteria Committ	ee	
Chair:	/s/ Peter O'Farrell	Date:	8/20/20	
Peter O'Fa	rrell, Carpenters Training Committee for	r Northern California		
Co-Chair:	/s/ Pete Saucedo	Date:	9/24/20	
Pete Sauce	edo. San Diego Associated General Contr	ractors J.A.C.		

# **Industry Training Criteria for Carpentry**

ONET Code: 47-2031.01

Date: 8/24/2020

#### 1. Length of Training

Minimum of four years Minimum of 4800 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Carpentry related and supplemental instruction

#### 3. On The Job Training

Appendix B: Carpenter Work Processes

# 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

# 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Carpentry shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### **Appendix A: Carpentry Related and Supplemental Instruction**

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)
  - First Aid and CPR Certification
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading and code requirements (Cal-Green)
  - Layout and leveling instruments
  - Scaffolds
- 3. Foundation and Floor Construction Systems
- 4. Structural Framing
  - Wood
  - Metal
  - Manufactured panels
- 5. Concrete Form Construction
- 6. Finish Carpentry
  - Interior
  - Exterior
- 7. Interior Systems
  - Metal studs; drywall; acoustical
  - Cabinet and casework installation; modular systems
  - Clean room
- 8. Roof Framing
  - Conventional roof framing
  - Engineered components
- 9. Stair Building
- 10. Building Envelope and Weatherization Skills
- 11. Alternative Energy Systems
  - Residential solar systems installation
  - Commercial photovoltaic; concentrated PV and tracking systems
- 12. Green Construction & Supplemental Skills
- Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# **Appendix B: Carpenter Work Processes**

Suggested Minimum On-The-Job Training (OJT) Hours: \* Includes but not limited to:

	WORK PROCESS	APPRO)	(IMATE HOURS
B. C. D.	Concrete Formwork Framing Finish Carpentry Building Envelope and Weatherization Solar Systems, Specialty Installations, and Green Site Work	1200 1300 800 700 800	
То	tal	4800	
and try totals to	are recommended minimums, and individual proto meet these minimums. A through E may be comeet the minimum of 4800 hours of on-the-job	ombined in di	fferent hourly
Submitted	By: Carpenter Minimum Industry Training Criteria	Committee	
	/s/ Peter O'Farrell arrell, Carpenters Training Committee for Northern	Date: California	8/20/20
_	/s/ Pete Saucedo edo, San Diego Associated General Contractors J.A.	Date: C.	9/24/20

# **Industry Training Criteria for Drywall Applicator**

ONET Code: 47-2031.01D

Date: 8/24/2020

#### 1. Length of Training

Minimum of three years
Minimum of 4800 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year. Appendix A: Drywall Applicator related and supplemental instruction

#### 3. On The Job Training

Appendix B: Drywall Applicator Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 30%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Drywall Applicator shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

# Appendix A: Drywall Applicator Related and Supplemental Instruction

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)
  - First aid and CPR certification
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading
  - Layout and leveling instruments
  - Scaffolds
- 3. Framing Installation
  - Measuring and layout
  - Wood and metal
  - Cutting and fitting
  - Welding AWS
- 4. Interior and Exterior Systems
  - Gypsum and low VOC; green board
  - Exterior insulation finish system (E.I.F.S.)
  - Drywall repairs and patching
  - Drywall finishing
- 5. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# **Appendix B: Drywall Applicator Work Processes**

Suggested Minimum On-The-Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMATE HOURS
A. Handling and Storage of Materials	350
B. Metal Framing Systems and Layout	1150
C. Interior and Exterior Coverings	2200
D. Special Systems	800
E. Supplemental Skills and Green Site Wo	ork 300
Total	4,800

<sup>\*</sup>These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through E may be combined in different hourly totals to meet the minimum of 4800 hours of on-the-job training.

<u>The committee has unanimously agreed to submit the Drywall Applicator MITC without revisions.</u>

Submitted By: Drywall Applicator Minimum Industry Training Criteria Committee				
Chair:	/s/ Peter O'Farrell	Date:	8/20/20	
Peter O'Fa	arrell, Carpenters Training Committee fo	r Northern California		
Co-Chair:	/s/ Pete Saucedo	Date:	9/24/20	
Pete Sauc	redo. San Diego Associated General Cont	ractors LA.C.		

## **Industry Training Criteria for Hardwood Floor Layer**

ONET Code: 47-2031.01L

Date: 8/24/2020

#### 1. Length of Training

Minimum of three years ,Minimum of 3600 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year. Appendix A: Hardwood Floor Layer related and supplemental instruction

#### 3. On The Job Training

Appendix B: Hardwood Floor Layer Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related

Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Hardwood Floor Layer shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### Appendix A: Hardwood Floor Layer Related and Supplemental Instruction

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA); respirators
  - Safety Data Sheets
  - First aid and CPR certification
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading and code requirements (Cal-Green)
- 3. Tools of the Trade
  - o Sanding and finishing equipment
  - o Tool maintenance and repair
- 4. Installation of Wood Flooring
  - Strip flooring
  - Tongue and groove
  - Pre-finished
  - Athletic and specialty floors
  - FSC certified and/or rapidly renewable flooring materials
- 5. Sanding and Finishing
- 6. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# Appendix B: Hardwood Floor Layer Work Processes

Suggested Minimum On The Job Training (OJT) Hours: \* Includes but not limited to:

Pete Saucedo, San Diego Associated General Contractors J.A.C.

WORK PROCESS	APPROXIMATE HOURS	
A. Preparation and Laying	1350	
B. Nailing	450	
C. Sanding and Finishing	1300	
D. Athletic Floors and Systems	400	
E. Supplemental Skills and Green Site Work	100	
Total	3600	
*These are recommended minimums, and i to meet these minimums. A through E may minimum of 3600 hours of on the job traini  The committee has unanimously agreed to revisions.	be combined in different hourly to ng.	tals to meet the
Submitted By: Hardwood Floor Layer Minim		
Chair: /s/ Peter O'Farrell	Date: <u>8</u>	<u>/20/20</u>
Peter O'Farrell, Carpenters Training Commit	ttee for Northern California	
Co-Chair: /s/ Pete Saucedo	Date: <u>9</u>	/24/20

# **Industry Training Criteria for Insulator**

ONET Code: 47-2131.00

Date: 8/24/2020

## 1. Length of Training

Minimum of 3 years
Minimum of 3600 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Insulator related and supplemental instruction

#### 3. On The Job Training

Appendix B: Insulator Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Insulator shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### **Appendix A: Insulator Related and Supplemental Instruction**

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)
  - First aid and CPR certification
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading and code requirements (Cal-Green)
  - Layout and leveling instruments
  - Scaffolds
- 3. Job Preparation, Organization and Control
  - Material identification, handling, storage, loading and securing for transport
  - Stocking, record keeping/inventory control; job orders (work sheets), and material quantity control
  - Familiarization with building envelope insulation best practices
- 4. Blown-In Insulation
  - Access preparation, refitting and close up
  - Blow machine operation and maintenance
  - Application of loose fill in walls and ceilings
- 5. Batt & Blanket Installation
  - Residential
  - Commercial and industrial building walls, ceiling and floors
- 6. Foil & Moisture Barrier Installation
  - Applicable to residential, commercial and industrial applications.
- 7. Spray, Rigid, and Specialty Application
  - Residential, commercial and industrial application of low volatile organic compounds (VOC) (g), cellulose, urethane and light weight plaster
  - Sound board, styrene, and urethane rigid insulation
  - Fire stop systems
- 8. Green Construction & Supplemental Skill
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

## **Appendix B: Insulator Work Processes**

Suggested Minimum On-The-Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMATE HOURS
A. Job Preparation, Organization and Con	trol 300
B. Blown-In Insulation	400
C. Batt & Blanket Installation	1000
D. Foil & Moisture Barrier Installation	700
E. Spray, Rigid, and Specialty Application	1000
F. Building Envelope, Fire Stop, Suppleme	ntal Skills 200
and Green Site Work	
Total	3600

<sup>\*</sup>These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through E may be combined in different hourly totals to meet the minimum of 4800 hours of on-the-job training.

# <u>The committee has unanimously agreed to submit the Insulator Installer MITC without</u> revisions.

Submitted	By: Insulator Installer Minimum Industry Train	ning Criteria Comm	nittee	
Chair:	/s/ Peter O'Farrell	Date:	8/20/20	
Peter O'Fa	rrell, Carpenters Training Committee for Nortl	hern California		
Co-Chair:_	/s/ Pete Saucedo	Date:	9/24/20	
Pete Sauce	edo. San Diego Associated General Contractors	 s.l.A.C.		

# **Industry Training Criteria for Modular Installer**

ONET Code: 51-9199.99M

Date: 8/24/2020

#### 1. Length of Training

Minimum of two years Minimum of 2400 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year. Appendix A: Modular Installer related and supplemental instruction

#### 3. On The Job Training

Appendix B: Modular Installer Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary the industry training criteria. Any and all such industry training criteria for Modular Installer shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### Appendix A: Modular Installer Related and Supplemental Instruction

#### Safety

- Safety with hand and power tools
- Construction site worker safety (OSHA)/ergonomics
- First aid and CPR certification

#### 2. Basic Skills

- Trade orientation
- Construction mathematics
- Print reading
- Stock bills and work orders

#### 3. Hand and Power Tools

- Measuring, layout and alignment
- Power supply and cordless tool management
- Drills, attachments and anchoring

#### 4. Site Considerations

- Personal appearance, behavior and office etiquette
- · Material delivery, handling and staging
- Establishing and maintaining clear transit route(s)
- · Housekeeping and health hazards

#### 5. Assembly Construction

- General assembly procedures
- Manufacturer's product-specific instructions and guidelines
- Custom work and adjustments
- Quality Control and productivity

#### 6. Installation and Finish Work

- Layout and alignment
- Installation sequences and procedures
- Electrical and component connections
- Cabinets, shelving and accessories
- Wood finishes and repairs

# 7. Green Construction & Supplemental Skills

- Green awareness: environment and sustainability; jobsite energy conservation and efficiency
- Green rating systems; personal jobsite "green" responsibilities
- Green building codes: CalGreen
- Green products and sustainable building materials
- Waste management and recycling procedures
- Site environmental management and protection procedures
- Construction air quality management

# **Appendix B: Modular Installer Work Processes**

Suggested Minimum On The Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMA	TE HOURS
A. Material Storage & Safety Proce	dures	100
B. Staging, Uncrating and Pre-Job P	reparation	350
C. Measuring, Layout and Assembly	y	750
D. Installation and Quality Controls	;	1000
E. Supplemental Skills and Green Si	ite Work	200
Total		2,400
hese are recommended minimums	, and individual pro	ogram sponso

<u>The committee has unanimously agreed to submit the Modular Installer MITC without revisions.</u>

Submitted	d By: Modular Installer Minimum Industi	ry Training Criteria Comm	ittee	
Chair:	/s/ Peter O'Farrell	Date:	8/20/20	
Peter O'F	arrell, Carpenters Training Committee fo	or Northern California		
Co-Chair:	/s/ Pete Saucedo	Date:	9/24/20	
Pete Sauc	cedo. San Diego Associated General Cont	tractors J.A.C.		

<sup>\*</sup>These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through E may be combined in different hourly totals to meet the minimum of 2400 hours of on-the-job training.

# **Industry Training Criteria for Millwright**

ONET Code: 49-9044.00

Date: 8/24/2020

#### 1. Length of Training

Minimum of four years
Minimum of 4800 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Millwright related and supplemental instruction

#### 3. On The Job Training

Appendix B: Millwright Work Processes

# 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 36%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary the industry training criteria. Any and all such industry training criteria for Millwright shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### Appendix A: Millwright Related and Supplemental Instruction

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)
  - First aid and CPR certification
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading
  - Layout and leveling instruments
  - Human performance
- 3. Cutting & Welding
  - Oxy-acetylene cutting and welding
  - Plasma-arc cutting
  - Layout, fabrication and fitting
  - AWS structural welding
- 4. Machinery Installation
  - Layout and machinery bases
  - Precision measuring and alignment
  - Power drives and hydraulic systems
  - Rigging
- 5. Machinery Maintenance
  - Pumps and motors
  - Compressors
  - Bearings, pulleys and belts
  - Turbines and generators
  - Troubleshooting and repairs
- 6. Alternative Energy Systems
  - Utility scale concentrated PV and tracking systems
  - Wind turbine installation and maintenance
  - Geo-thermal and cogeneration power production
- 7. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# **Appendix B: Millwright Work Processes**

Suggested Minimum On The Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMATE HOURS
A. Material Handling, Rigging and Safet	v Procedures 600
B. Welding, Layout, Fabrication	500
C. Machinery Leveling & Alignment	600
D. Power Drives and Hydraulic Systems	1,000
E. Machinery Installation, Power Gener Chemical, and Maintenance	ation, Petro1- 1,600
F. Supplemental Skills, Alternative Ener Installations, and Green Site Work	gy 500
Total	4800

<sup>\*</sup>These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through F may be combined in different hourly totals to meet the minimum of 4800 hours of on-the-job training.

# The committee has unanimously agreed to submit the Millwright MITC without revisions.

Submitted	d By: Millwright Installer Minimum Indus	stry Training Criteria Com	mittee
Chair:	/s/ Peter O'Farrell	Date:	8/20/20
Peter O'Fa	arrell, Carpenters Training Committee fo	r Northern California	
Co-Chair:	/s/ Pete Saucedo	Date:	9/24/20
Pete Sauc	edo, San Diego Associated General Cont	ractors J.A.C.	

# **Industry Training Criteria for Pile Driver**

ONET Code: 47-2072.00

Date: 8/24/2020

#### 1. Length of Training

Minimum of four years

Minimum of 4800 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Pile Driver related and supplemental instruction

#### 3. On The Job Training

Appendix B: Pile Driver Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 30%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Pile Driver shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### Appendix A: Pile Driver Related and Supplemental Instruction

- Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)
  - First aid and CPR certification
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading
  - Layout and leveling instruments
  - Scaffolds
- 3. Pile Driving
  - Measuring and layout
  - Rigging and signaling
  - Structural pile driving
  - Retaining pile systems (cofferdams, etc.)
  - Handling piles and hammers
  - Pile driving equipment
- 4. Concrete and Formwork
  - Bridge decks and abutments
  - Pile caps and columns
- 5. Heavy Timber Framing and Falsework
  - Pipe shoring o Timber falsework
  - Manufactured falsework
- 6. Marine and Underwater Work
  - Piers and docks
  - Diving systems and submersibles
  - Underwater welding
  - Wave energy conversion (WEC) devices
- 7. Cutting and Welding
  - Oxy-acetylene cutting and welding
  - Layout, fabrication and fitting
  - AWS structural welding
- 8. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# **Appendix B: Pile Driver Work Processes**

Suggested Minimum On The Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMATE HOURS
A. Pile Driving	1400
B. Concrete and Formwork	1400
C. Heavy Timber Framing and	1000
Falsework	
D. Marine Construction, and Wave Energy	Conversion 400
E. Hot Work- Burning and Welding	500
F. Supplemental Skills and Green Site Work	100
Total	4800

<sup>\*</sup> These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through F may be combined in different hourly totals to meet the minimum of 4800 hours of on-the-job training.

# The committee has unanimously agreed to submit the Pile Driver MITC without revisions.

Submitted	d By: Pile Driver Minimum Industry Trainin	ng Criteria Committee		
Chair:	/s/ Peter O'Farrell	Date:	8/20/20	
Peter O'Fa	arrell, Carpenters Training Committee for	Northern California		
Co-Chair:_	/s/ Pete Saucedo	Date:	9/24/20	
Pete Sauc	edo, San Diego Associated General Contr	actors J.A.C.		

# **Industry Training Criteria for Scaffold Erector**

ONET Code: 47-2031.02S

Date: 8/24/2020

#### 1. Length of Training

Minimum of four years
Minimum of 4800 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Scaffold Erector related and supplemental instruction

#### 3. On The Job Training

Appendix B: Scaffold Erector Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Scaffold Erector shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### Appendix A: Scaffold Erector Related and Supplemental Instruction

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)/fall protection
  - First aid and CPR certification
  - Confined space safety training
- 2. Basic Skills
  - Trade orientation
  - Construction mathematics
  - Print reading
  - Layout and leveling instruments
  - Scaffold regulations
- 3. Frame Scaffold Installation
  - Measuring and layout
  - Basic installation and attachment methods
- 4. System Scaffold Installation
  - Measuring and layout
  - Basic installation and attachment methods
- 5. Tube & Clamp Scaffold Installation
  - Measuring and layout
  - Basic installation and attachment methods
  - Confined space (angles and slopes)
- 6. Specialty Scaffold Applications
- 7. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

# **Appendix B: Scaffold Erector Work Processes**

Co-Chair: /s/ Pete Saucedo

Pete Saucedo, San Diego Associated General Contractors J.A.C.

Suggested Minimum On The Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMATE HOURS			
A. Material Handling and Safety Proced	ures 500			
B. Layout, Leveling, Alignment and Ancient Procedures	horing 300			
C. Frame, System, Tube & Clamp Scaffo Construction	ld 3000			
D. Specialty Scaffold Installations & Pro	cedures 500			
E. Supplemental Skills and Green Site W	/ork 500			
Total	4,800			
* These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through E may be combined in different hourly totals to meet the minimum of 4800 hours of on-the-job training.  The committee has unanimously agreed to submit the Scaffold Erector MITC without revisions.				
Submitted By: Scaffold Erector Minimum Industry Training Criteria Committee				
Chair: /s/ Peter O'Farrell Peter O'Farrell, Carpenters Training Comm	Date: nittee for Northern California	8/20/20		

Date: <u>9/24/20</u>

# **Industry Training Criteria for Shingler**

ONET Code: 47-2181.00S

Date: 8/24/2020

#### 1. Length of Training

Minimum of two years

Minimum of 2400 work hours

#### 2. Related Supplemental (Classroom) Instruction

Minimum of 144 hours of Related and Supplemental Instruction per year.

Appendix A: Shingler related and supplemental instruction

#### 3. On The Job Training

Appendix B: Shingler Work Processes

#### 4. Competency Evaluation

All apprentices must pass a competency evaluation prior to the time of their classification advancement to the next higher period. The evaluation shall be based on Related Supplemental Instruction.

#### 5. Apprenticeship Program Completion Percentages

Of those apprentices that satisfactorily progressed beyond the first two periods of apprenticeship, program sponsors must have a completion rate of no less than 33%.

#### 6. Procedures for the Review and Revision of the Training Criteria

The Carpenters' Industry Advisory Committee shall meet at the call of the chair or no less than once each three years to review, and revise if necessary, the industry training criteria. Any and all such industry training criteria for Shingler shall be in accordance with California Code of Regulations, Title 8, Section 212 in its entirety.

#### **Appendix A: Shingler Related and Supplemental Instruction**

- 1. Safety
  - Safety with hand and power tools
  - Construction site worker safety (OSHA)/fall protection
  - First aid and CPR certification
- 2. Basic Skills Trade orientation
  - Construction mathematics
  - Print reading and code requirements (Cal-Green)
  - Rigging
- 3. Weatherization o Flashing
  - o Underlayment applications
  - o Exterior weather protection
  - o Sealing the building envelope
- 4. Roofs and Sidewalls
  - Composition
  - Shake
  - Wood shingle
  - Metal
  - Tile
  - Solar system installations
- 5. Green Construction & Supplemental Skills
  - Green awareness: environment and sustainability; jobsite energy conservation and efficiency
  - Green rating systems; personal jobsite "green" responsibilities
  - Green building codes: CalGreen
  - Green products and sustainable building materials
  - Waste management and recycling procedures
  - Site environmental management and protection procedures
  - Construction air quality management

## **Appendix B: Shingler Work Processes**

Suggested Minimum On The Job Training (OJT) Hours: \* Includes but not limited to:

WORK PROCESS	APPROXIMATE HOURS
A. Flashing and Underlayment Application	
B. Shake and Wood Shingle Roofs and Si	idewalls 400 900
C. Composition Shingles D. Tile	300
E. Metal	200
F. Solar Installations, Supplemental Skill	s, and Green 100
Site Work	
Total	2400

<sup>\*</sup>These are recommended minimums, and individual program sponsors should review and try to meet these minimums. A through F may be combined in different hourly totals to meet the minimum of 2400 hours of on-the-job training.

# The committee has unanimously agreed to submit the Shingler MITC without revisions.

Submitted	d By: Shingler Minimum Industry Training (	Criteria Committee		
Chair:	/s/ Peter O'Farrell	Date:	8/20/20	
Peter O'Fa	arrell, Carpenters Training Committee for N	Northern California		
Co-Chair:	/s/ Pete Saucedo	Date:	9/24/20	
Pete Sauc	cedo, San Diego Associated General Contra	ctors J.A.C.		