

*Teri Gardner 8-27-2020*

DATE: August 27, 2020  
TO: Jody Robbins, Apprenticeship Program Manager  
FROM: Gary Peterson, Apprenticeship Consultant  
Re: "Decline to Sign" memorandum for the proposed Andgar Corporation Sheet Metal  
Worker Apprenticeship

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I am unable to provide field approval, also known as the "AC sign off," on the proposed Andgar Corporation Sheet Metal Worker Apprenticeship. The Sponsor – WA. UBI #600 100 192 is seeking an apprenticeship that has Apprenticeship Committee members from two other companies. The other two companies are Andgar Architectural Metals – WA. UBI #604 254-874 and Andgar Mechanical – WA. UBI #604 255 353. WAC 296-05-009 (1b) states that an Individual Program represents one employer and in my assessment, this Sponsor appears to have three employers involved.

Received 8/27/2020 Bellingham - GWP

Department of Labor & Industries  
Apprenticeship Section  
PO Box 44530  
Olympia WA 98504-4530



### REQUEST FOR APPROVAL OF PROPOSED STANDARDS



TO: Washington State Apprenticeship & Training Council

FROM Andgar Corporation

*Teri Gardner 8-27-2020*

NAME OF PROGRAM STANDARDS

Check appropriate box:

Committee       Plant       OJT

OCCUPATION(S):	HOURS:	SOC #:
Sheet Metal Worker	9000	47.2211.00

Authorized Signatures:

Chair: <i>[Signature]</i>	Approved by: Washington State Apprenticeship & Training Council
Secretary: <i>[Signature]</i>	Secretary of Council
Date: <i>8-14-20</i>	Date:

Teri Gardner 9-10-2020

Teri Gardner 8-27-2020



APPRENTICESHIP PROGRAM STANDARDS  
adopted by

ANDGAR CORPORATION  
(sponsor name)

Occupational Objective(s): SHEET METAL WORKER  
SOC# 47.2211.00 Term [WAC 296-05-015] 9000 HOURS



APPROVED BY  
Washington State Apprenticeship and Training Council  
REGISTERED WITH  
Apprenticeship Section of Fraud Prevention and Labor Standards  
Washington State Department Labor and Industries  
Post Office Box 44530  
Olympia, Washington 98504-4530

APPROVAL:

Provisional Registration

Standards Last Amended

Permanent Registration

By: Chair of Council

By: Secretary of Council

# ANDGAR CORPORATION

## INTRODUCTION

This document is an apprenticeship program standard. Apprenticeship program standards govern how an apprenticeship works and have specific requirements. This document will explain the requirements.

The director of the Department of Labor and Industries (L&I) appoints the Washington State Apprenticeship and Training Council (WSATC) to regulate apprenticeship program standards. The director appoints and deputizes an assistant director to be known as the supervisor of apprenticeship who oversees administrative functions through the apprenticeship section at the department.

The WSATC is the sole regulatory body for apprenticeship standards in Washington. It approves, administers, and enforces apprenticeship standards, and recognizes apprentices when either registered with L&I's apprenticeship section, or under the terms and conditions of a reciprocal agreement. WSATC also must approve any changes to apprenticeship program standards.

Apprenticeship programs have sponsors. A sponsor operates an apprenticeship program and declares their purpose and policy herein to establish an organized system of registered apprenticeship education and training. The sponsor recognizes WSATC authority to regulate and will submit a revision request to the WSATC when making changes to an apprenticeship program standard.

Apprenticeships are governed by federal law (29 U.S.C 50), federal regulations (29 CFR Part 29 & 30), state law (49.04 RCW) and administrative rules (WAC 296-05). These standards conform to all of the above and are read together with federal and state laws and rules

Standards are changed with WSATC approval. Changes are binding on apprentices, sponsors, training agents, and anyone else working under an agreement governed by the standards. Sponsors may have to maintain additional information as supplemental to these standards. When a standard is changed, sponsors are required to notify apprentices and training agents. If changes in federal or state law make any part of these standards illegal, the remaining parts are still valid and remain in force. Only the part made illegal by changes in law is invalid. L&I and the WSATC may cooperate to make corrections to the standards if necessary to administer the standards.

Sections of these standards identified as bold "**insert text**" fields are specific to the individual program standards and may be modified by a sponsor submitting a revised standard for approval by the WSATC. All other sections of these standards are boilerplate and may only be modified by the WSATC. See WAC 296-05-003 for the definitions necessary for use with these standards.

Sponsor Introductory Statement (Required):

**Andgar Corporation understands and recognizes the importance of creating a Sheet Metal Worker craft training program that meets the evolving needs of the industry as it relates to**

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safety, skills, standards for quality work, professionalism, increased customer satisfaction, etc.. This program establishes the necessary training that will lead the successful apprentice to the status of State Certified Journey level worker in the specified occupation.

### **I. GEOGRAPHIC AREA COVERED:**

The sponsor must train inside the area covered by these standards. If the sponsor wants to train outside the area covered by these standards, the sponsor must enter a portability agreement with a sponsor outside the area, and provide evidence of such an agreement for compliance purposes. Portability agreements permit training agents to use apprentices outside the area covered by the standards. Portability agreements are governed by WAC 296-05-009.

**The area covered by these standards shall be all counties located within the State of Washington.**

### **II. MINIMUM QUALIFICATIONS:**

Minimum qualifications must be clearly stated and applied in a nondiscriminatory manner [WAC 296-05-015(17)].

- Age:           **Applicants shall be at least 18 years of age.**
- Education:   **Applicants shall be a high school graduate or State Equivalent Certification or GED.**
- Physical:     **Applicants must be physically capable of performing the work of this trade with or without reasonable accommodations, and without posing a direct threat to the health and safety of the individual or others.**
- Testing:      **Applicants must complete an entrance assessment at a Washington State Community or Technical College, and provide test results showing the ability to place or enroll in an Intermediate Math course coded at the 90 level or higher. Applicants who have taken and passed an Algebra course in high school or college with a “B” or 3.0 grade or better, within the last 12 months prior to application, may present transcripts in lieu of testing. The cost of the test will be paid by the applicant.**
- Other:         **Applicants must be a current employee of an Andgar Company. Applicants shall submit proof of the education, testing, and age qualifications, to the Committee before their application will be**

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considered completed. This must be done within sixty (60) days of date of application. Applicants not completing the application within sixty (60) days will be required to reapply.

### **III. CONDUCT OF PROGRAM UNDER WASHINGTON EQUAL EMPLOYMENT OPPORTUNITY PLAN:**

Sponsors with five (5) or more apprentices must adopt an Equal Employment Opportunity (EEO) Plan and Selection Procedure (chapter 296-05 WAC and 29 CFR Part 30).

The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, sex (including pregnancy and gender identity), sexual orientation, color, religion, national origin, age, genetic information, disability or as otherwise specified by law. The sponsor shall take positive action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington State Apprenticeship and Training Council and Title 29, Part 30 of the Code of Federal Regulations.

#### **A. Selection Procedures:**

- 1. The company shall do a companywide posting, announcing openings as they occur in the apprentice occupation.**
- 2. The company shall select the apprentices from those employees in the company who answer the posting.**
- 3. Selection shall be based on past work history, a demonstrated learning ability, prior schooling or experience, and Committee interview panel.**
- 4. The Committee will notify applicants of the selection.**

#### **B. Equal Employment Opportunity Plan:**

**The employment policy of Andgar Companies is to provide equal opportunity to all persons. Our company, therefore, has made a commitment to equal employment opportunity through a positive and continuing Affirmative Action Program.**

**Particular attention will be given to female and minority representation, both from within and outside of Andgar Companies.**

- 1. Communicate and distribute information about the nature of the apprenticeship program, admission requirements, current apprenticeship opportunities, the source of apprenticeship applications, and the equal opportunity policies of the program sponsor within Andgar Companies. Advertisements of employment opportunities may also be posted with the Work Source Centers, newspapers, and minority organizations.**

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2. Use journey-level workers, including minority and female, to assist in the implementation of the sponsor's equal employment opportunity plan.
3. Grant credit for previous trade experience or trade-related courses for all applicants equally.
4. Participate in events at the nearby community colleges, high schools, and technical schools. Focus will be on the recruitment and placement of minorities and women (minority and non-minority) into the Andgar Apprenticeship program.

### C. Discrimination Complaints:

Any apprentice or applicant for apprenticeship who believes they have been discriminated against may file a complaint with the supervisor of apprenticeship (WAC 296-05-443).

## IV. TERM OF APPRENTICESHIP:

The term of apprenticeship for an individual apprentice may be measured through the completion of the industry standard for on-the-job learning (at least two thousand hours) (time-based approach), the attainment of competency (competency-based approach), or a blend of the time-based and competency-based approaches (hybrid approach) [WAC 296-05-015].

**The term of apprenticeship shall be nine thousand (9000) hours of reasonably continuous on the job training including the apprenticeship initial probationary period.**

## V. INITIAL PROBATIONARY PERIOD:

An initial probationary period applies to all apprentices, unless the apprentice has transferred from another program. During an initial probationary period, an apprentice can be discharged without appeal rights. An initial probationary period is stated in hours or competency steps of employment. The initial probationary period is not reduced by advanced credit or standing. During an initial probationary period, apprentices receive full credit for hours and competency steps toward completion of their apprenticeship. Transferred apprentices are not subject to additional initial probationary periods [WAC 296-05-003].

The initial probationary period is [WAC 296-05-015(22)]:

- A. the period following the apprentice's registration into the program. An initial probationary period must not be longer than twenty percent of the term of the entire

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apprenticeship, or longer than a year from the date the apprenticeship is registered. The WSATC can grant exemptions for longer initial probationary periods if required by law.

- B. the period in which the WSATC or the supervisor of apprenticeship may terminate an apprenticeship agreement at the written request by any affected party. The sponsor or the apprentice may terminate the agreement without a hearing or stated cause. An appeal process is not available to apprentices in their initial probationary period.
- C. **The initial probationary period shall be the first one thousand eight hundred (1,800) hours of the apprenticeship employment.**

### **VI. RATIO OF APPRENTICES TO JOURNEY LEVEL WORKERS**

Supervision is the necessary education, assistance, and control provided by a journey-level employee on the same job site at least seventy-five percent of each working day, unless otherwise approved by the WSATC. Sponsors ensure apprentices are supervised by competent, qualified journey-level employees. Journey level-employees are responsible for the work apprentices perform, in order to promote the safety, health, and education of the apprentice.

- A. The journey-level employee must be of the same apprenticeable occupation as the apprentice they are supervising unless otherwise allowed by the Revised Code of Washington (RCW) or the Washington Administrative Code (WAC) and approved by the WSATC.
- B. The numeric ratio of apprentices to journey-level employees may not exceed one apprentice per journey-level worker [WAC 296-05-015(5)].
- C. Apprentices will work the same hours as journey-level workers, except when such hours may interfere with related/supplemental instruction.
- D. Any variance to the rules and/or policies stated in this section must be approved by the WSATC.
- E. The ratio must be described in a specific and clear manner, as to the application in terms of job site, work group, department or plant:

**The ratio of apprentices to journey-level workers shall be one (1) apprentice to one (1) journey-level worker on each jobsite.**

### **VII. APPRENTICE WAGES AND WAGE PROGRESSION:**

- A. Apprentices must be paid at least Washington's minimum wage, unless a local ordinance or a collective bargaining agreement require a higher wage. Apprentices must be paid according to a progressively increasing wage scale. The wage scale for apprentices is



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based on the specified journey-level wage for their occupation. Wage increases are based on hours worked or competencies attained. The sponsor determines wage increases. Sponsors must submit the journey-level wage at least annually or whenever changed to the department as an addendum to these standards. Journey-level wage reports may be submitted on a form provided by the department. Apprentices and others should contact the sponsor or the Department for the most recent Journey-level wage rate.

B. Sponsors can grant advanced standing, and grant a wage increase, when apprentices demonstrate abilities and mastery of their occupation. When advanced standing is granted, the sponsor notifies the employer/training agent of the wage increase the apprenticeship program standard requires.

C. Wage Progression Schedules

**Sheet Metal Worker**

Step	Hour Range or competency step	Percentage of journey-level wage rate*
<b>1</b>	<b>0000 – 1000 hours</b>	<b>40%</b>
<b>2</b>	<b>1001 – 2000 hours</b>	<b>45%</b>
<b>3</b>	<b>2001 – 3000 hours</b>	<b>50%</b>
<b>4</b>	<b>3001 – 4000 hours</b>	<b>60%</b>
<b>5</b>	<b>4001 – 5000 hours</b>	<b>70%</b>
<b>6</b>	<b>5001 – 6000 hours</b>	<b>75%</b>
<b>7</b>	<b>6001 – 7000 hours</b>	<b>80%</b>
<b>8</b>	<b>7001 – 8000 hours</b>	<b>90%</b>
<b>9</b>	<b>8001 – 9000 hours</b>	<b>95%</b>

**VIII. WORK PROCESSES:**

The apprentice shall receive on the job instruction and work experience as is necessary to become a qualified journey-level worker versed in the theory and practice of the occupation covered by these standards. The following is a condensed schedule of work experience, which every apprentice shall follow as closely as conditions will permit. The following work process descriptions pertain to the occupation being defined.

A. **Sheet Metal Worker**

**Approximate Hours/Competency Level**

- 1. **General Sheet Metal Work .....1700**
- 2. **Operation of Hand and Power Machinery .....1000**

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3. Architectural Sheet Metal .....	1500
4. Specialty Installations (e.g. Stainless-Steel Work).....	1000
5. Industrial Sheet Metal (blow pipe, dust collection, etc.) .....	500
6. Air Conditioner, Heat Pump, and Furnace .....	1000
7. Welding, Soldering, and Brazing.....	800
8. Rigging, Hoisting, and Material Handling .....	500
9. Air Balance .....	200
10. Computer Use (MS, CAD, Revit, Bluebeam, Etc.) .....	200
11. Safety .....	300
12. Indoor Air Quality .....	300
<b>Total Hours:</b>	<b>9000</b>

**All such work shall be performed under the supervision of a journey-level worker. Supervision should not be of such a nature to prevent the development of responsibility.**

**IX. RELATED/SUPPLEMENTAL INSTRUCTION:**

The apprentice must attend related/supplemental instruction (RSI). Time spent in RSI shall not be considered as hours of work and the apprentice is not required to be paid.

RSI must be provided in safe and healthy conditions as required by the Washington Industrial Safety and Health Act and applicable federal and state regulations.

Hours spent in RSI are reported to L&I each quarter. Reports must show which hours are unpaid and supervised by a competent instructor versus all other hours (paid and/or unsupervised) for industrial insurance purposes.

For purposes of coverage under the Industrial Insurance Act, the WSATC is an employer and the apprentice is an employee when an unpaid, supervised apprentice is injured while under the direction of a competent instructor and participating in RSI activities.

If apprentices do not attend required RSI, they may be subject to disciplinary action by the sponsor.

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A. The methods of related/supplemental training must be indicated below (check those that apply):

- Supervised field trips
- Sponsor approved training seminars (specify) – **Would include but is not limited to: First Aid/CPR Training, OSHA 10 Certification.**
- Sponsor approved online or distance learning courses (specify) – **Would include but is not limited to: National Center for Construction Education and Research Connect, Andgar University Online Learning Management System.**
- State Community/Technical college
- Private Technical/Vocational college
- Sponsor Provided (lab/classroom) – **Andgar Corporation Facilities**
- Other (specify):

B. **200** Minimum RSI hours per year defined per the following [see WAC 296-05-015(6)]:

- Twelve-month period from date of registration.\*
- Defined twelve-month school year: **September** through **August**.
- Two-thousand hours of on the job training.

*\*If no selection is indicated above, the WSATC will define RSI hours per twelve-month period from date of registration.*

C. Additional Information:

1. **Apprentices will be responsible for completing the prescribed curriculum within the designated period. All courses need to be completed with a 70% or better.**
2. **At the end of each quarter, any Apprentices who fail to complete the required courses with passing scores must arrange within one (1) week of the end of the quarter to meet with the Training Director.**
3. **The Apprentice and the Training Director will work together to establish a plan for making up incomplete courses.**

## X. ADMINISTRATIVE/DISCIPLINARY PROCEDURES:

A. Administrative Procedures:

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The sponsor may include in this section a summary and explanation of administrative actions performed at the request or on the behalf of the apprentice. Such actions may include but are not limited to:

1. Voluntary Suspension: A temporary interruption in progress of an individual's apprenticeship agreement at the request of the apprentice and granted by the sponsor. The program sponsor shall review apprentices in suspended status at least once each year to determine if the suspension is still appropriate.
2. Advanced Standing or Credit: The sponsor may provide for advanced standing or credit for demonstrated competency, acquired experience, training or education in or related to the occupation. All sponsors need to ensure a fair and equitable process is applied to all apprentices seeking advanced standing or credit per WAC 296-05-015(11).
3. Sponsor Procedures:
  - A. **A daily record of hours worked in each category of on-the-job training will be maintained by each Apprentice. Apprentices will review their properly completed and signed work progress reports weekly with their Journey Level Trainer. Apprentices will submit reports monthly to the Training Director. The report will be submitted on or before the 10th of the following month.**
  - B. **The Apprentice's Journey Level Trainer will sign off the Apprentice's record of hours worked in each category every week.**
  - C. **The Apprentice's will apply oneself both on the job and in related training programs and continually strive to become a skilled worker.**
  - D. **The classroom policies and procedures shall be adhered to at all times. Each Apprentice will receive a copy of these policies and procedures on an annual basis. The Apprentice must read, understand, and abide by these policies and procedures.**
  - E. **All Apprentices must be released from "on the job" commitments to attend scheduled Related Supplemental Instruction.**
  - F. **Apprentices must be in the classroom with the required materials and ready for class by the scheduled time of class.**
  - G. **The responsibility rests solely with the Apprentice to complete all lessons and topics missed due to absenteeism.**
  - H. **Any Apprentice who fails to return to class following a break or who decides to leave early of their own volition, shall be given no credit for that class and shall be marked as absent for the entire class.**

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- I. Any test missed due to absence of the Apprentice shall be made up at the convenience of the Training Instructor.
- J. Overtime hours worked shall be recorded as actual hours worked.

### B. Disciplinary Procedures

1. The obligations of the sponsor when taking disciplinary action are as follows:
  - a. The sponsor shall be responsible for enacting reasonable policies and procedures and applying them consistently. The sponsor will inform all apprentices of their rights and responsibilities per these standards.
  - b. The sponsor shall notify the apprentice of intent to take disciplinary action and reasons therefore 20 calendar days prior to taking such action. The reason(s) supporting the sponsor's proposed action(s) must be sent in writing to the apprentice.
  - c. The sponsor must clearly identify the potential outcomes of disciplinary action, which may include but are not limited to discipline, suspension or cancellation of the apprenticeship agreement.
  - d. The decision/action of the sponsor will become effective immediately.
2. The sponsor may include in this section requirements and expectations of the apprentices and an explanation of disciplinary actions imposed for noncompliance. The sponsor has the following disciplinary procedures to adopt:
  - a. Disciplinary Probation: A time assessed when the apprentice's progress is not satisfactory. During this time the sponsor may withhold periodic wage advancements, suspend or cancel the apprenticeship agreement, or take further disciplinary action. A disciplinary probation may only be assessed after the initial probation is complete.
  - b. Disciplinary Suspension: A temporary interruption in the progress of an individual's apprenticeship agreement. Conditions will include not being allowed to participate in On-the-Job Training (OJT), go to Related Supplemental Instruction (RSI) classes or take part in any activity related to the Apprenticeship Program until such time as the sponsor takes further action. The program sponsor shall review apprentices in such status at least once each year.
  - c. Cancellation: Refers to the termination of an apprenticeship agreement at the request of the apprentice, supervisor, or sponsor. [WAC 296-05-003].

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### 3. Sponsor Disciplinary Procedures:

- a) **Monthly work records not turned in by the 10<sup>th</sup> day of the following month may result in the next scheduled uprate being held for thirty (30) days for each offense. Three (3) consecutive offenses may constitute action by the Andgar Corporation Apprenticeship Committee. Disciplinary action may include, Disciplinary Probation, Suspension, or Cancellation of the Apprenticeship Agreement.**
- b) **The Apprentice must comply with Andgar Corporation Apprenticeship Program attendance policies. Reaching the disciplinary level of attendance occurrences (missing more than two classes per quarter) may result in delayed upgrade and/or disciplinary action up to and including cancellation of the Apprenticeship Agreement.**
- c) **An Apprentice's termination of employment with an Andgar Company for any reason will result in the cancellation of the Apprenticeship Agreement.**
- d) **Any Apprentice being disciplined will be subject to the procedures as set forth in the sections C & D. below.**
- e) **The Apprentice may be required to appear before the Apprenticeship Committee and provide an explanation as to why they did not complete all courses for that quarter with passing scores. Disciplinary action may include, disciplinary probation, suspension, or cancellation of the Apprenticeship Agreement.**
- f) **Failure to achieve a passing grade of 70% or better on any portion of the prescribed curriculum, may result in an extension of the apprentice's completion date and a corresponding delay in the apprentice's next pay increase as deemed necessary by the Andgar Corporation Apprenticeship Program.**

### C. Apprentice Complaint Procedures:

1. The apprentice must complete his/her initial probationary period in order to be eligible to file a complaint (WAC 296-05-105).
2. Complaints involving matters covered by a collective bargaining agreement are not subject to the complaint procedures in this section.
3. Complaints regarding non-disciplinary matters must be filed with the program sponsor within 30 calendar days from the date of the last occurrence. Complaints must be in writing.

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4. If the apprentice disagrees with the resolution of the complaint or wishes to contest the outcome of a disciplinary action by the program sponsor, the apprentice must file a written request for reconsideration with the program sponsor within 30 calendar days from the date the apprentice received written notice of action by the program sponsor.
5. The program sponsor must reply, in writing, to the request for reconsideration within 30 calendar days from the date the program sponsor receives the request. The program sponsor must send a copy of the written reply to the apprentice within the 30 calendar days.
6. If the apprentice disagrees with the program sponsor's decision, the apprentice may file an appeal with the Apprenticeship Program, (WAC 296-05-105). If the apprentice does not timely file an appeal, the decision of the program sponsor is final after 30 calendar days from the date the program sponsor mails the decision to the apprentice. See section "D" below.

### D. Apprentice Complaint Review/Appeals Procedures:

1. If the apprentice disagrees with the program sponsor's decision, the apprentice must submit a written appeal to L&I's apprenticeship section within 30 calendar days from the date the decision is mailed by the program sponsor. Appeals must describe the subject matter in detail and include a copy of the program sponsor's decision.
2. The L&I apprenticeship section will complete its investigation within 30 business days from the date the appeal is received and attempt to resolve the matter.
3. If the Apprenticeship section is unable to resolve the matter within 30 business days, the Apprenticeship section issues a written decision resolving the appeal.
4. If the apprentice or sponsor is dissatisfied with L&I's decision, either party may request the WSATC review the decision. Requests for review to the WSATC must be in writing. Requests for review must be filed within 30 calendar days from the date the decision is mailed to the parties.
5. The WSATC will conduct an informal hearing to consider the request for review.
6. The WSATC will issue a written decision resolving the request for review. All parties will receive a copy of the WSATC's written decision.

## XI. SPONSOR – RESPONSIBILITIES AND GOVERNING STRUCTURE

The following is an overview of the requirements associated with administering an apprenticeship program. These provisions are to be used with the corresponding RCW and/or WAC. The sponsor is the policymaking and administrative body responsible for the

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operation and success of this apprenticeship program. The sponsor may assign an administrator or a committee to be responsible for day-to-day operations of the apprenticeship program. Administrators and/or committee members must be knowledgeable in the process of apprenticeship and/or the application of chapter 49.04 RCW and chapter 296-05 WAC and these standards. If applicable, sponsors must develop procedures for:

### A. Committee Operations (WAC 296-05-009): (Not applicable for Plant Programs)

Apprenticeship committees must be composed of an equal number of management and non-management representatives from a minimum of four to a maximum of twelve members. Committees must convene meetings at least three times per year attended by a quorum of committee members as defined in these approved standards.

### B. Program Operations

The sponsor will record and maintain records pertaining to the administration of the apprenticeship program and make them available to the WSATC or Department upon request. Records required by WAC 296-05-100 will be maintained for five (5) years; all other records will be maintained for three (3) years. Apprenticeship sponsors will submit required forms/reports to the Department of Labor and Industries through one of the two prescribed methods below:

Sponsors shall submit required forms/reports through assigned state apprenticeship consultant.

Or;

Sponsors shall submit required forms/reports through the Apprentice Registration and Tracking System (ARTS), accessed through Secure Access Washington (SAW).

Paper forms as well as ARTS external access forms are available from the sponsor's assigned apprenticeship consultant or online at:

<http://www.lni.wa.gov/TradesLicensing/Apprenticeship/FormPub/default.asp>.

1. The following is a listing of forms/reports for the administration of apprenticeship programs and the time-frames in which they must be submitted:
  - a. Apprenticeship Agreements – within first 30 days of employment
  - b. Authorization of Signature forms - as necessary
  - c. Approved Training Agent Agreements– within 30 days of sponsor action
  - d. Minutes of Apprenticeship Committee Meetings – within 30 days of sponsor approval (not required for Plant program)
  - e. Request for Change of Status - Apprenticeship/Training Agreement and Training Agents forms – within 30 days of action by sponsor.
  - f. Journey Level Wage Rate – annually, or whenever changed as an addendum to section VII. Apprentice Wages and Wage Progression.
  - g. Related Supplemental Instruction (RSI) Hours Reports (Quarterly):



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- 1st quarter: January through March, due by April 10
  - 2nd quarter: April through June, due by July 10
  - 3rd quarter: July through September, due by October 10
  - 4th quarter: October through December, due by January 10
  - h. On-the-Job Work Hours Reports (bi-annual)
    - 1st half: January through June, by July 30
    - 2nd half: July through December, by January 31
2. The program sponsor will adopt, as necessary, local program rules or policies to administer the apprenticeship program in compliance with these standards. Requests for revision to these standards of apprenticeship must be submitted 45 calendar days prior to a quarterly WSATC meeting. The Department of Labor and Industries, Apprenticeship Section's manager may administratively approve requests for revisions in the following areas of the standards:
- a. Program name
  - b. Sponsor's introductory statement
  - c. Section III: Conduct of Program Under Washington Equal Employment Opportunity Plan
  - d. Section VII: Apprentice Wages and Wage Progression
  - e. Section IX: Related/Supplemental Instruction
  - f. Section XI: Sponsor – Responsibilities and Governing Structure
  - g. Section XII: Subcommittees
  - h. Section XIII: Training Director/Coordinator
3. The sponsor will utilize competent instructors as defined in WAC 296-05-003 for RSI. Furthermore, the sponsor will ensure each instructor has training in teaching techniques and adult learning styles, which may occur before or within one year after the apprenticeship instructor has started to provide instruction.

### C. Management of Apprentices:

1. Each apprentice (and, if under 18 years of age, the parent or guardian) will sign an apprenticeship agreement with the sponsor, who will then register the agreement with the Department before the apprentice attends RSI classes, or within the first 30 days of employment as an apprentice. For the purposes of industrial insurance coverage and prevailing wage exemption under RCW 39.12.021, the effective date of registration will be the date the agreement is received by the Department.
2. The sponsor must notify the Department within 30 days of all requests for disposition or modification to apprentice agreements, which may include:
  - a) Certificate of completion
  - b) Additional credit
  - c) Suspension (i.e. military service or other)
  - d) Reinstatement
  - e) Cancellation

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- f) Corrections
  - g) Step Upgrades
  - h) Probation Completion date
  - i) Other (i.e., name changes, address)
  - j) Training Agent Cancellation
3. The sponsor commits to rotate apprentices in the various processes of the skilled occupation to ensure the apprentice is trained to be a competent journey-level worker.
  4. The sponsor shall periodically review and evaluate apprentices before advancement to the apprentice's next wage progression period. The evidence of such advancement will be the record of the apprentice's progress on the job and during related/supplemental instruction.
  5. The sponsor has the obligation and responsibility to provide, insofar as possible, reasonably continuous employment for all apprentices in the program. The sponsor may arrange to transfer an apprentice from one training agent to another or to another program when the sponsor is unable to provide reasonably continuous employment, or they are unable to provide apprentices the diversity of experience necessary for training and experience in the various work processes as stated in these standards. The new training agent will assume all the terms and conditions of these standards. If, for any reason, a layoff of an apprentice occurs, the apprenticeship agreement will remain in effect unless canceled by the sponsor.
  6. An apprentice who is unable to perform the on-the-job portion of apprenticeship training may, if the apprentice so requests and the sponsor approves, participate in related/supplemental instruction, subject to the apprentice obtaining and providing to the sponsor written requested document/s for such participation. However, time spent will not be applied toward the on-the-job portion of apprenticeship training.
  7. The sponsor shall hear and decide all complaints of violations of apprenticeship agreements.
  8. Upon successful completion of apprenticeship, as provided in these standards, and passing the examination that the sponsor may require, the sponsor will recommend the WSATC award a Certificate of Completion of Apprenticeship. The sponsor will make an official presentation to the apprentice who has successfully completed his/her term of apprenticeship.

### D. Training Agent Management:

1. The sponsor shall offer training opportunities for apprentices by ensuring reasonable and equal working and training conditions are applied uniformly to all apprentices. The sponsor shall provide training at an equivalent cost to that paid by other employers and apprentices participating in the program. The sponsor shall not

## ANDGAR CORPORATION

require an employer to sign a collective bargaining agreement as a condition of participation.

2. The sponsor must determine whether an employer can adequately furnish proper on the job training to an apprentice in accordance with these standards. The sponsor must also require any employer requesting approved training status to complete an approved training agent agreement and to comply with all federal and state apprenticeship laws, and these standards.
3. The sponsor will submit training agent agreements to the Department with a copy of the agreement and/or the list of approved training agents within thirty calendar days from the effective date. Additionally, the sponsor must submit rescinded training agent agreements to the Department within thirty calendar days of said action.

E. Committee governance (if applicable): (see WAC 296-05-009)

1. Apprenticeship committees shall elect a chairperson and a secretary who shall be from opposite interest groups, i.e., chairperson-employers; secretary-employees, or vice versa. If the committee does not indicate its definition of quorum, the interpretation will be "50% plus 1" of the approved committee members. The sponsor must also provide the following information:

- a. Quorum: **SEE ABOVE**
- b. Program type administered by the committee: **Individual Non-Joint**
- c. The employer representatives shall be:

**Dan Hogan**  
**Andgar Mechanical LLC**  
**P.O. Box 2708**  
**Ferndale, WA. 98248**

**Mike McDonald – Secretary**  
**Andgar Architectural Metal LLC**  
**P.O. Box 2708**  
**Ferndale, WA. 98248**

- d. The employee representatives shall be:

**Andrew DeMooy - Chairperson**  
**Andgar Mechanical LLC**  
**P.O. Box 2708**  
**Ferndale, WA. 98248**

**David Boschma**  
**Andgar Architectural Metal LLC**  
**P.O. Box 2708**  
**Ferndale, WA. 98248**

F. Plant programs

For plant programs the WSATC or the Department designee will act as the apprentice representative. Plant programs shall designate an administrator(s) knowledgeable in the

## ANDGAR CORPORATION

process of apprenticeship and/or the application of chapter 49.04 RCW and chapter 296-05 WAC and these standards.

The designated administrator(s) for this program is/are as follows:

NA

### **XII. SUBCOMMITTEE:**

Subcommittee(s) approved by the Department, represented equally from management and non-management, may also be established under these standards, and are subject to the main committee. All actions of the subcommittee(s) must be reviewed by the main committee. Subcommittees authorized to upgrade apprentices and/or conduct disciplinary actions must be structured according to the same requirements for main committees.

None

### **XIII. TRAINING DIRECTOR/COORDINATOR:**

The sponsor may employ a person(s) as a full or part-time training coordinator(s)/ training director(s). This person(s) will assume responsibilities and authority for the operation of the program as are delegated by the sponsor.

**Tom Bajema  
Andgar Corporation Workforce Training Manager  
P.O. Box 2708  
Ferndale, WA. 98248**

Received 8/27/2020 Bellingham - JWP



Teri Gardner 8-27-2020

Andgar Corporations Sheet Metal Apprenticeship Committee selection process for the employee positions.

On June 10<sup>th</sup> Josh Cuperus sent out the following message to all eligible journey level sheet metal workers within the Andgar Corporation companies.

*Andgar Corporation is in the process of assembling Program Standards for a state registered sheet metal apprenticeship program. As a requirement of those standards an Apprenticeship Committee needs to be formed to administer the program for Andgar Corporation. The committee members will consist of an equal number of management and worker representatives. And will meet a minimum of three times annually.*

*I have been asked by Workforce Training Manager Tom Bajema to work with the journey-level sheet metal employees at Andgar Companies in the selection process of the worker representatives for this committee. Worker representatives must hold a journey-level status or greater in the sheet metal occupation.*

*Please select two individuals from the provided list who would represent the sheet metal trade for Andgar in a positive way as it relates to the training and developing of apprentice workers.*

*Please e-mail me the two names no later than 6-12-20, the top two nominated individuals will then be asked to accept the position of committee member with one having the additional responsibility of Committee Secretary. If one or both declines the request to serve, we will move to the next in line as needed.*

According to WA state apprenticeship rules:

*Journey Level: An individual having sufficient skills and knowledge of an occupation to be recognized by a state or federal registration agency and/or industry as being fully qualified to perform the occupation. An individual can be fully qualified either through formal apprenticeship training or practical on-the-job work experience equal to or greater than the term of apprenticeship. ( For sheet metal the term of apprenticeship is 9000 hours )*

*Thank you,*

*Josh*

After all nominations were tallied the two individuals selected based on number of nominations were Josh Cuperus and Andrew DeMooy. This was announced to Tom Bajema via email on 6-26-20.

Upon submission of the Apprenticeship Committee representative Qualification form to our coordinator Gary Peterson it was determined that Josh Cuperus due to his position was not able to serve in the capacity of employee representative. On July 15<sup>th</sup> Tom Bajema contacted committee member Andrew DeMooy to again contact all eligible journey level sheet metal workers within the Andgar Companies and ask for their nomination for the second committee representative. On July 15<sup>th</sup> Andrew sent out the following email.

All,

*Unfortunately as a result of the management position that Josh Cuperus holds at Andgar Corporation, Josh is not eligible to hold a position on the Sheet Metal Apprenticeship Committee he was nominated for. We have to nominate one more individual from the list below.*



*As you all are aware, Andgar Corporation is in the process of assembling Program Standards for a state registered sheet metal apprenticeship program. As a requirement of those standards an Apprenticeship Committee needs to be formed to administer the program for Andgar Corporation. The committee members will consist of an equal number management and worker representatives. And will meet a minimum of three times annually.*

*I have been asked by Workforce Training Manager Tom Bajema, to work with the journey-level sheet metal employees at Andgar in the selection process of the worker representatives for this committee. Work representatives must hold a journey-level status or greater in the sheet metal occupation. Below you will see the list of eligible employees who at this time qualify to be a representative.*

*According to WA state apprenticeship rules an individual having sufficient skills and knowledge of an occupation to be recognized by a state or federal registration agency and/or industry as being fully qualified to perform the occupation. An individual can be fully qualified either through formal apprenticeship training or practical on-the-job work experience equal to or greater than the term of apprenticeship. ( For sheet metal the term of apprenticeship is 9000 hours )*

*Please select one individual from the list below who would represent the sheet metal trade for Andgar for positive growth and for the training and development of sheet metal apprentices. **Please respond by Friday morning (7-17-20)***

*Thanks,  
Andrew*

After all nominations were tallied the individual selected based on number of nominations was David Boschma. This was announced to Tom Bajema via email on 7-17-20.

Teri Gardner 8-27-2020

Received 8/27/2020 Bellingham - GWP

Department of Labor and Industries  
Apprenticeship Section  
PO Box 44530  
Olympia WA 98504-4530



### Apprenticeship Committee Representative Qualification Information Experience & Education History

NAME OF PROGRAM/SPONSOR:	Andgar Corporation
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Committee Representative Name: Mike McDonald
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WORK EXPERIENCE			
POSITION (Most recent first)	EMPLOYER / ORGANIZATION	FROM: (Month &Year)	TO: (Month &Year)
Genreal Foreman	Andgar Architectural Metal LLC	4/2020	Present
Installation & Fabrication Project Supervisor	Andgar Architectural Metal LLC	10/1/2018	3/2020
Installation & Fabrication Project Supervisor	Andgar Corporation	5/2007	9/30/2018
Foreman/Installer	Sound Sheet Metal	2001	5/2007
ForemanInstaller	MTR Sheet Metal	1995	2001
Installer	Pioneer Sheet Metal	1988	1995

EDUCATION HISTORY				
Name and Location of Training and/or School	Month/Year Attended From	To	Program of Study	Type of Certificate or Degree Awarded, if any

OTHER TECHNICAL CERTIFICATIONS or LICENSES HELD
CPR, First Aid and AED (current)
Qualified Rigger & Signal person (Exp. 2023); Scissor Lift, Boom Lift and Forklift Certifed (2011)
Fall Protection and Scaffold Erector Competent Person (issued 2011); Fraco Scaffold Certified (2019)
L.A. Refinery Safety Overview (Exp. 2013); NCRSO Test (2015)
Osha 10 (2010); C-Stop (2010)

Teri Gardner 8-27-2020

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Apprenticeship Section  
PO Box 44530  
Olympia WA 98504-4530



### Apprenticeship Committee Representative Qualification Information Experience & Education History

NAME OF PROGRAM/SPONSOR:	Andgar Corporation
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Committee Representative Name: Daniel Hogan
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WORK EXPERIENCE			
POSITION (Most recent first)	EMPLOYER / ORGANIZATION	FROM: (Month & Year)	TO: (Month & Year)
Commercial HVAC Estimator and Project Manager	Andgar Mechanical LLC	1/2018	Present
HVAC Estimator and Project Manager and Sheet Metal Installer	Lodestar HVAC Co.	10/1989	12/2017
HVACR Installer	Horeco	6/1985	10-1989

EDUCATION HISTORY				
Name and Location of Training and/or School	Month/Year Attended From	To	Program of Study	Type of Certificate or Degree Awarded, if any
Lk Washington Technical College	1985		Refrigeration 101	
Lk Washington Technical College	1986		Refrigeration 102	

OTHER TECHNICAL CERTIFICATIONS or LICENSES HELD
Electrician 06A - HVAC/RFRG; Refrigerant handling from RSES; City of Seattle gas piping license
TiteFlez Gas Piping systems; PE Underground gas piping
Mitsubishi VRF Diamon Dealer training; Daikin VRV training
Pelican Wirelss Systems training



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PO Box 44530  
Olympia WA 98504-4530



### Apprenticeship Committee Representative Qualification Information Experience & Education History

NAME OF PROGRAM/SPONSOR:	Andgar Corporation
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Committee Representative Name: David Boschma
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WORK EXPERIENCE			
POSITION (Most recent first)	EMPLOYER / ORGANIZATION	FROM: (Month & Year)	TO: (Month & Year)
Sheet Metal Fabricator	Andgar Architectural Metal LLC	10/1/2018	8/2020
Sheet Metal Fabricator	Andgar Corporation	6/2007	9/30/2018

EDUCATION HISTORY				
Name and Location of Training and/or School	Month/Year Attended		Program of Study	Type of Certificate or Degree Awarded, if any
	From	To		
CITC / Andgar Corp	2008	2011	Sheet Metal	Journey Level Sheet Metal

OTHER TECHNICAL CERTIFICATIONS or LICENSES HELD

Sponsors may attach additional pages if necessary.

Teri Gardner 8-27-2020

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PO Box 44530  
Olympia WA 98504-4530



### Apprenticeship Committee Representative Qualification Information Experience & Education History

NAME OF PROGRAM/SPONSOR:	Andgar Corporation
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Committee Representative Name: Andrew DeMooy
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WORK EXPERIENCE			
POSITION (Most recent first)	EMPLOYER / ORGANIZATION	FROM: (Month & Year)	TO: (Month & Year)
Field Supervisor	Andgar Mechanical LLC	10/2010	Present
Sheet Metal Installer	Andgar Corporation	10/2004	10/2010
Sheet Metal Apprentice	Andgar Corporation	10/2000	10/2004

EDUCATION HISTORY				
Name and Location of Training and/or School	Month/Year Attended		Program of Study	Type of Certificate or Degree Awarded, if any
	From	To		
CITC	10/2000	9/2004	Sheet Metal	State Registered - Journey Level

OTHER TECHNICAL CERTIFICATIONS or LICENSES HELD
Qualified rigger and signal person (exp 2023)
Safety training for operators of powered Industrial Trucks;
Hilti Powder Actuated Tools - Qualified Operator
TracPipe CounterStrike and Tracpipe PS-II certified installer
CPR, AED and First Aid certified

*Received 8/27/2020 Bellingham - GWP*

*Teri Gardner 8-27-2020*

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Apprenticeship Section  
PO Box 44530  
Olympia WA 98504-4530



**Journey Level Wage Rate**  
From which apprentices' wages rates are computed

TO: Washington State Apprenticeship & Training Council

From Andgar Corporation

(NAME OF STANDARDS)

Occupations	County(s)	Journey Level Wage Rate	Effective Date:
Sheet Metal Worker	State Of Washington	\$35.66	11/1/2020

# Apprenticeship Related/Supplemental Instruction (RSI) Plan Review

Program Sponsor Andgar Corporation		<i>Teri Gardner 8-27-2020</i>	
Skilled Occupational Objective Sheet Metal Worker			
Term/OJT Hours 9000	Total RSI Hours 900		
Training Provider Andgar Corporation			

By the signature placed below, the **program sponsor** agrees to provide the prescribed RSI for each registered apprenticeship and assures that:

1. The RSI content and delivery method is and remains reasonably consistent with the latest occupational practices, improvements, and technical advances.
2. The RSI is coordinated with the on-the-job work experience.
3. The RSI is provided in safe and healthful work practices in compliance with WISHA and applicable federal and state regulations.

Tom Bajema

Printed Name of Program Sponsor



Signature of Program Sponsor

By the signature placed below, the **training provider** assures that:

1. The RSI will be conducted by instructors who meet the qualifications of "competent instructor" as described in WAC 296-05-003.
  - a. Has demonstrated a satisfactory employment performance in his/her occupation for a minimum of three years beyond the customary learning period for that occupation; and
  - b. Meets the State Board for Community and Technical Colleges requirements for a professional technical instructor (see WAC 131-16-080 through -094), or be a subject matter expert, which is an individual, such as a journey worker, who is recognized within the industry as having expertise in a specific occupation; and
  - c. Has training in teaching techniques and adult learning styles, which may occur before or within one year after the apprenticeship instructor has started to provide the related technical instruction.
2. If using alternative forms of instruction, such as correspondence, electronic media, or other self-study, such instruction is clearly defined.

Tom Bajema

Print Name Training Provider



Signature of Training Provider

Workforce Training Manager

Title of Training Provider

Andgar Corporation

Organization of Training Provider

If there are additional training providers, please provide information and signatures on the next page.

**Additional Resources:** [Apprenticeship Related Supplemental Instruction \(RSI\) Plan Review Glossary of Term \(F100-519-000\)](#) and [Apprenticeship Related Supplemental Instruction \(RSI\) Plan Review Criteria \(F100-521-000\)](#).

**SBCTC Program Administrator** has reviewed RSI plan and recommendations of the Trade Committee.

Click or tap here to enter text.

Print Name of SBCTC Program Administrator

Signature of SBCTC Program Administrator

Date

SBCTC recommends approval

SBCTC recommends return to sponsor

## Additional Training Providers (if necessary)

Click or tap here to enter text.

Print Name Training Provider

Click or tap here to enter text.

Title of Training Provider

Click or tap here to enter text.

Print Name Training Provider

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Title of Training Provider

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Title of Training Provider

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Organization of Training Provider

Program Sponsor: Andgar Corporation	Skilled Occupational Objective: Sheet Metal Worker Year 1
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**Note:** The description of each element must be in sufficient detail to provide adequate information for review by the SBCTC and Review Committee. To add more elements, click on the plus sign that appears below the "Description of element/course" field.

**Describe minimum hours of study per year in terms of (check one):**

- 12-month period from date of registration.
- Defined 12-month school year.
- 2,000 hours of on-the-job training.

Element/Course: Basic Safety- Year 1	Planned Hours: 12
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Construction Site Safety Orientation – Following OSHA 10 guidelines apprentices will learn about safety obligations of workers, supervisors, and managers to ensure a safe workplace. Apprentices will understand causes and results of accidents including the financial impact that accidents can have on the individual and the business. Other topics will include: Personal Protective Equipment (PPE). Common jobsite hazards and safety protections. Introduces the Fatal Four and prevention of them. Chemicals and other potentially hazardous materials and Safety Data Sheets (SDS). Fire prevention and safety. Hazardous work environments.	

Element/Course: Introduction to Hand Tools – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Introduces hand tools widely used in a variety of construction crafts. Explains proper tool use and discusses the importance of tool safety and maintenance.	

Element/Course: Introduction to Power Tools – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Identifies and describes the operation of power tools common in the construction environment. Provides instruction on proper use, safe-handling guidelines, and basic maintenance.	

Element/Course: Introduction to Construction Drawings – Year 1	Planned Hours: 10
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will be familiarized with basic terms for construction drawings, components and symbols. Explains the different types of drawings (Civil, Architectural, Mechanical, Etc.) and instructs apprentices how to interpret and use drawing dimensions.	

Element/Course: Basic Communication Skills – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Provides apprentices with techniques for effective communication on the job. Includes practical examples that emphasize the importance of both verbal and written information on the job. Apprentices will also learn the importance of effective phone use and email communication skills.	

Element/Course: Basic Employability Skills – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Introduces apprentices to critical thinking and essential problem-solving skills for the construction industry. Reviews effective relationship skills, effective self-presentation, and workplace issues associated with alcohol and drug abuse.	

Element/Course: Applied Construction Math – Year 1	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will review Decimals and Fractions; Squares, Rectangles, Triangles, and Trapezoids; The Powers of ten and averages; Angles, Pythagorean Theorem, and surface area; Volumes and units of measure conversions; Temperatures; Percentages; Irregular shapes; Linear and fractional measurement; Materials estimates; Calculating costs; Introduction to Trigonometry.	

Element/Course: Introduction to Material Handling – Year 1	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn to recognize hazards associated with handling materials and learn techniques to avoid both personal injury and property damage. Apprentices will also be introduced to various types of hand and power operated material handling equipment.	

Element/Course: Rigging and Signaling – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will receive training and demonstrate their knowledge and understanding of the rules, regulations, and safe practices related to the safe selection, application, use and inspection of basic rigging used with mobile, tower, and overhead cranes. Apprentices will receive training and demonstrate their knowledge and understanding of the rules, regulations, and safe practices related to signaling crane operators. Apprentices will also be trained on energized power line safety regulations as well as understanding the hazards of working around mobile, tower, and overhead cranes.	

Element/Course: Forklift & Aerial Work Platform training – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will receive training and demonstrate their knowledge, understanding, and safe practices related to safe operation of Forklifts and Aerial Work Platforms	

Element/Course: Building a Respectful Work Environment – Year 1	Planned Hours: 2
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input checked="" type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn the definition of and forms of workplace harassment. Apprentices will learn how to cultivate a respectful work environment and how to respond to and report inappropriate workplace behaviors.	

Element/Course: Basic CPR/First Aid/AED – Year 1	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn and demonstrate the basics of CPR, AED, and First Aid for adults in accordance with the most current guidelines provided by the American Heart Association and American Red Cross.	

Element/Course: Introduction to Thermal and Moisture Protection – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This NCCER course introduces apprentices to application and material installation methods used for insulating buildings, ducts, and pipes as well as application and material installation methods used for moisture control and waterproofing behind a buildings exterior cladding system.	

Element/Course: Sheet Metal Worker Occupational Overview – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Provides apprentices with a look at the sheet metal craft and the diversity it offers. The course introduces various sheet metal industry applications in <b>Heating-Ventilation-Air Conditioning (HVAC)</b> , Building Materials, Manufacturing, Architecture, Consumer products and the opportunities a sheet metal craftworker has in these areas.	



Element/Course: Sheet Metal Tools and Equipment – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Identification, safety, and proper use of sheet metal hand and power tools; Identification, safety, and proper use of sheet metal machines used in fabrication such as - Shears, Presses, Brakes, Punches, Lock formers, and Spot welders. Apprentices will be given the opportunity to set up and safely use the various tools and machines.	

Element/Course: Plasma Arc Cutting – Year 1	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Introduces sheet metal apprentices to plasma arc cutting. Provides information related to the plasma arc cutting process, including safety procedures, setup, gas types, flow rates, and equipment styles. Apprentices will be given the opportunity to set up and safely use plasma arc cutters for their intended use.	

Element/Course: Sheet Metal Math and Measurements – Year 1	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: A refresher of NCCER's Applied Construction Math as it relates specifically to the sheet metal industry for drawing, pattern layout, fabrication, installation, measuring, and testing.	

Element/Course: Fundamentals of Sheet Metal Layout and Processes – Year 1	Planned Hours: 12
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Provides a fundamental understanding to the apprentices of the basic sheet metal layout and forming processes; Explains general rules that apply to sheet metal layout work and how to select and use common layout tools. Explains the three primary methods used for the layout of sheet metal patterns and the processes of cutting, forming, and assembling finished products. Apprentices will be given the opportunity to better understand these skills with hands on learning.	

Element/Course: Parallel Line Development – Year 1	Planned Hours: 36
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn how to use Parallel Line Development to lay out the patterns needed to fabricate various sheet metal components commonly used in HVAC duct systems and Architectural Metal installations. Apprentices will then spend time using Parallel Line Development to layout and assemble various sheet metal products.	

Element/Course: Installation of Ductwork – Year 1	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn proper identification and selection of fasteners, hangers, and supports for the installation of ductwork and other HVAC system components. An understanding of load requirements and the standards related to fasteners, hangers, and supports is vitally important to a proper and safe installation. Identification, purpose, assembly and installation methods of the various transverse duct connections will also be taught. Hands on opportunity will be provided to the apprentices to use this knowledge in various simulated job site settings.	

Element/Course: Installation of Air Distribution Accessories – Year 1	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will be taught the function of and installation methods for duct accessories such as: Louvers, Air Volume and Control Dampers, Fire and Fire/Smoke Control Dampers, In-Line Fans, Service Access Panels, etc. Opportunities will be given to practice installing these various accessories to meet manufacturer, as well as building and mechanical code requirements.	

Program Sponsor: Andgar Corporation	Skilled Occupational Objective: Sheet Metal Worker Year 2
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**Note:** The description of each element must be in sufficient detail to provide adequate information for review by the SBCTC and Review Committee. To add more elements, click on the plus sign that appears below the "Description of element/course" field.

**Describe minimum hours of study per year in terms of (check one):**

- 12-month period from date of registration.
- Defined 12-month school year.
- 2,000 hours of on-the-job training.

Element/Course: Introduction to hand drawing and drafting – Year 2	Planned Hours: 6
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will be introduced to useful hand drawing techniques that will allow them to understand and put into practice scale, angles, perspective, and dimensions used for visual communication purposes in sheet metal fabrication and installation.	

Element/Course: Field Measurements, Calculations, and Fittings – Year 2	Planned Hours: 24
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will review important math concepts that are applied in the sheet metal industry. These concepts will be used based on field measurements taken at the correct points to create offsets that are frequently needed to fit specific and unique situations of the job. Sheet metal seam and bend allowances will also be introduced.	

Element/Course: Construction and Sheet Metal Drawings – Year 2	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Builds on the skills learned in Level 1 Introduction to Construction Drawings. Apprentices will learn how to read and interpret section, elevation, and detail drawings. Specific instruction and hands on practice will be given to interpreting HVAC Sheet Metal and Architectural Metal Drawings, Sections, and Details.	

Element/Course: Sheet Metal Duct and Architectural Metal Fabrication Standards – Year 2	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This course will teach apprentices to understand the building codes and industry standards for fabrication and assembly of sheet metal duct systems and architectural metal systems including but not limited to metal types, gauges, connectors, reinforcements, penetrations, joints, seams, operating pressures, etc. Knowing where to find and how to interpret and understand these codes and standards will ensure a product of consistent quality and promote professionalism in the craft.	

Element/Course: Bend Allowances – Year 2	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn and understand the cause and the result of metal compression and stretching during the process of bending. Methods of how to calculate bend allowances for use in the sheet metal fabrication process will be taught.	

Element/Course: Shop Safety – Year 2	Planned Hours: 10
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Prior to entering the fabrication shop for level 2 activities apprentices will be reacquainted with shop safety, material handling safety, and procedures necessary for safe use of the various power operated shears, presses, and forming machines used during the fabrication process	

Element/Course: Radial Line Development – Year 2	Planned Hours: 46
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Radial Line Development is a method frequently used for the fabrication of sheet metal components such as cones, reducers, and other tapered shapes. Apprentices will learn and then use the principles of Radial Line Development to lay out and fabricate various sheet metal components.	

Element/Course: Triangulation – Year 2	Planned Hours: 46
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Triangulation is the process of using trigonometry to create patterns and calculate true line lengths. It is often used to fabricate some of the more difficult components used by sheet metal workers, including square-to-round fittings, roof collars, stacks and caps, and fittings that join at unusual angles. Apprentices will learn and then use the principles of the triangulation process to develop patterns and fabricate sheet metal components.	

Element/Course: Soldering – Year 2	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Soldering is a process in which a heated metal alloy is used as a filler metal to fasten sheet metal parts, seal seams, and connect piping. Apprentices will learn how to safely prepare the material being soldered, choose the appropriate materials, and use the required tools. Because the soldering process involves chemicals and hot surfaces it can be hazardous, additional time will be spent preparing apprentices on how to solder carefully and safely.	

Element/Course: Air Distribution Systems – Year 2	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn the factors related to air movement and air measurements within an air distribution system. Air moving equipment and the various materials used in air distribution systems will be introduced. Apprentices also will learn that proper equipment selection in conjunction with the designed air distribution system are critical components to an energy efficient and effect air distribution system.	

Program Sponsor: Andgar Corporation	Skilled Occupational Objective: Sheet Metal Worker Year 3
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**Note:** The description of each element must be in sufficient detail to provide adequate information for review by the SBCTC and Review Committee. To add more elements, click on the plus sign that appears below the "Description of element/course" field.

**Describe minimum hours of study per year in terms of (check one):**

- 12-month period from date of registration.
- Defined 12-month school year.
- 2,000 hours of on-the-job training.

Element/Course: Safety OSHA 10 – Year 3	Planned Hours: 10
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This course is intended to provide information needed for apprentices to be more aware of health and safety hazards in the shop and on the jobsite so they can be avoided. The course also includes a brief overview of how the Occupational Safety and Health Administration (OSHA) functions, and the rights of employers and employees.	

Element/Course: Basic CPR/First Aid/AED – Year 3	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn and demonstrate the basics of CPR, AED, and First Aid for adults in accordance with the most current guidelines provided by the American Heart Association and American Red Cross.	

Element/Course: Commercial Airside Systems – Year 3	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This course provides apprentices with an understanding of the various types of HVAC systems used in commercial buildings both large and small. Single zone and multi zone HVAC system designs will be presented as well as special air distribution equipment used in many commercial applications.	

Element/Course: Principles of Airflow – Year 3	Planned Hours: 24
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This course builds on the Air Distribution Systems course from level 2. Apprentices will learn how airflow is affected by duct size, shape, and material of construction. Features such as turning vanes that increase the efficiency of airflow in an elbow, minimize turbulence, and ensure the best possible airflow are explored. Apprentices will gain the knowledge and understanding needed to fabricate and install a system from a performance perspective and learn why this is important to building owners and their occupants.	

Element/Course: Air Testing and Balancing – Year 3	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Building on the concepts of air distribution and the importance of a properly constructed and installed air duct system learned in Levels 1 and 2. Apprentices will now develop an understanding of air testing and balancing for an installed and operating system. Apprentices will learn how to use specialized test instruments that measure air pressures, velocity, and volume during the air testing and balancing procedure.	

Element/Course: Construction Drawings in Sheet Metal – Year 3	Planned Hours: 24
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This will build on the construction drawing information previously learned in Levels 1 and 2. This course explains how to put knowledge of construction drawings to work as a sheet metal fabricator and installer, emphasizing the ways in which they interact with other craft drawings. This course provides a deeper understanding of equipment and material schedules, performing material takeoffs, and using this information for the scheduling of work.	

Element/Course: Blanket and Board Insulation for Ducts – Year 3	Planned Hours: 24
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This course builds on a portion of the Level 1 course - Introduction to Moisture and Thermal Barriers. Apprentices will learn and better understand the proper selection, performance factors, and installation methods of thermal barriers for duct and piping systems. Apprentices will also discover the effect that a correctly installed thermal barrier has on ducts and piping within an HVAC system.	

Element/Course: Sheet Metal Job Specifications – Year 3	Planned Hours: 24
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Plans, Specifications, and Submittals describe in detail how a building is to be constructed. This course will educate the apprentices on the critical nature of the information found within the specifications and submittal documents and how this information applies to a specific construction project.	

Element/Course: Introduction to Microsoft Office products – Year 3	Planned Hours: 6
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will be introduced to the various MS Office programs such as Outlook, Word, Excel, Power Point, Publisher, etc. that they will encounter and be required to utilize as their career advances.	

Element/Course: Blue Beam - REVU Essentials Training – Year 3	Planned Hours: 10
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This online training course introduces apprentices to the Bluebeam Revu eXtreme software used for creating, editing, marking up and collaborating on Architectural, Engineering and Construction (A.E.C.) documents.	

Element/Course: Introduction to AutoCAD 2D – Year 3	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn terminology and drawing fundamentals associated with using the AutoCAD 2D program.	

Element/Course: Architectural Sheet Metal Roofing – Year 3	Planned Hours: 22
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will be introduced to a variety of metal roofing components, including flashing, gutters, and downspouts, as well as the standing seam system used for many metal roofs. Apprentices will understand how these components work together to move water off of a roof and keep it from penetrating into vulnerable areas. Lab projects provide apprentices an opportunity to practice their lay out, fabrication, and installation skills of components such as roof decking panels, wall cap flashing, roof edge flashing, scuppers, and gutters.	

Element/Course: Architectural Sheet Metal Siding – Year 3	Planned Hours: 22
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will be introduced to a variety of exterior wall components. Apprentices will understand how these components work together to protect the building from the elements penetrating into vulnerable areas while creating an appealing building exterior. Lab projects will provide apprentices an opportunity to practice their lay out, fabrication, and installation skills of components such as underlayment, subgirts, insulation, door and window flashings, base flashings, penetration flashings, inside and outside corners, and wall panel systems.	



Program Sponsor: Andgar Corporation	Skilled Occupational Objective: Sheet Metal Worker Year 4
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**Note:** The description of each element must be in sufficient detail to provide adequate information for review by the SBCTC and Review Committee. To add more elements, click on the plus sign that appears below the "Description of element/course" field.

**Describe minimum hours of study per year in terms of (check one):**

- 12-month period from date of registration.
- Defined 12-month school year.
- 2,000 hours of on-the-job training.

Element/Course: Fume and Exhaust System design – Year 4	Planned Hours: 24
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn about fume and exhaust system designs needed to create safe indoor work environments. Provides instruction in selecting and installing the appropriate equipment and materials needed for fume and exhaust systems.	

Element/Course: Ventilation and Indoor Air Quality – Year 4	Planned Hours: 12
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will be introduced to the Washington State Building Code WAC 51-52 Chapter 4 Ventilation and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards. Various methods of air filtration and air cleaning devices used to improve indoor air quality in conjunction with HVAC systems will also be introduced.	

Element/Course: Welding and Brazing – Year 4	Planned Hours: 24
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Introduces the techniques and proper operation of the equipment used for welding and brazing. Emphasizes safe practices and awareness of the hazards involved. Apprentices will learn to use various welding machines to practice welding techniques and will use an oxyacetylene torch to practice brazing on copper tubing.	

Element/Course: Oxyfuel Cutting – Year 4	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will receive training on the safety requirements and proper use of oxyfuel cutting equipment. Time will be spent in the training lab using this method of cutting metal.	

Element/Course: Advanced Architectural Sheet Metal Roofing and Siding – Year 4	Planned Hours: 48
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This course will build on the Architectural Sheet Metal courses in level 3. Apprentices will learn about masonry flashings, decorative metals, cornices, roof flashings, scuppers, leader heads, eve flashings, gutter systems, downspouts, roof vents, louvers, sill pans, chimney caps and shrouds. Lab projects will further develop the apprentices' understanding and skill in fabrication and installation and of these components.	

Element/Course: Shop Production and Organization – Year 4	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn the common production practices used in sheet metal shops and the importance of careful planning to best support the field installation.	

Element/Course: Fundamentals of Crew Leadership / Foreman Training – Year 4	Planned Hours: 40
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn the basics of leadership including: Jobsite safety and the crew leader's role in creating a safe workplace, leadership styles, communication, delegating, problem solving, project planning, scheduling, and estimating.	

Element/Course: Sheet Metal Business and Technology – Year 4	Planned Hours: 8
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Technology has become commonplace in the industry, understanding its importance and what it can do is important for all craftworkers. Apprentices will learn how technology and software has and will continue to change the way Sheet Metal businesses operate.	

Element/Course: Introduction to AutoCAD 3D and Revit programs – Year 4	Planned Hours: 4
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: Apprentices will learn terminology and drawing fundamentals associated with using the AutoCAD 3D and Revit Building Information Modeling (BIM) programs that are commonly used by Architects and Engineers during construction design.	

Element/Course: Blue Beam - Advanced – Year 4	Planned Hours: 16
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: This online training course builds on the level 3 course and provides apprentices with the knowledge and skills to create, edit, markup and collaborate on A.E.C. documents on the jobsite using the Bluebeam Revu eXtreme software commonly used in the construction industry.	

Program Sponsor: Andgar Corporation	Skilled Occupational Objective: Sheet Metal Worker Year 5
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**Note:** The description of each element must be in sufficient detail to provide adequate information for review by the SBCTC and Review Committee. To add more elements, click on the plus sign that appears below the "Description of element/course" field.

**Describe minimum hours of study per year in terms of (check one):**

- 12-month period from date of registration.
- Defined 12-month school year.
- 2,000 hours of on-the-job training.

Element/Course: Osha 30 Hour Training – Year 5	Planned Hours: 30
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: OSHA 30-Hour Training courses teach health and safety awareness by helping supervisors and workers reduce the risk of workplace hazards. Additional benefits of OSHA 30-Hour Training include prevention of possible worksite hazards, understanding workers' rights, employer responsibilities and more.	

Element/Course: Supervisor Training Program – Year 5	Planned Hours: 70
Mode of Instruction (check all that apply) <input checked="" type="checkbox"/> Classroom <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Online <input checked="" type="checkbox"/> Self-Study Provided by: Andgar Corporation	
Description of element/course: The Supervisory Training Program has 6 modules that focus on the knowledge and skills needed for an apprentice to become an effective supervisor and manager of people time, equipment, and materials: Leadership and Motivation; Oral and Written Communication; Problem Solving and Risk Management; Contract Documents and Construction Law; Planning and Scheduling; Construction Productivity and Cost Management.	