



TORQ Analysis of Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders to Paper Goods Machine Setters, Operators, and Tenders

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	51-9051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Paper Goods Machine Setters, Operators, and Tenders	51-9196.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:								83			
Ability TORQ			Skills TORQ				Knowledge TORQ				
Level			85	Level			76	Level			87
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Imp	Skill	Level	Gap	Imp	Knowledge	Level	Gap	Imp
Finger Dexterity	42	5	53	Critical Thinking	60	32	74	No Knowledge Upgrades Required!			
Arm-Hand Steadiness	42	3	59	Equipment Maintenance	58	15	74				
Manual Dexterity	41	2	53	Quality Control Analysis	50	14	70				
Auditory Attention	46	2	50	Learning Strategies	64	12	69				
				Reading Comprehension	54	9	69				
				Time Management	48	8	71				
				Operation and Control	60	5	75				
<p>LEVEL and IMPT (IMPORTANCE) refer to the Target Paper Goods Machine Setters, Operators, and Tenders. GAP refers to level difference between Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Paper Goods Machine Setters, Operators, and Tenders.</p>											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Paper Goods Machine Setters, Operators, and Tenders	Importance
Problem Sensitivity	48	39	59
Arm-Hand Steadiness	39	42	59
Selective Attention	51	44	56
Control Precision	50	48	56
Near Vision	53	48	56



Oral Comprehension	53	44	53
Information Ordering	44	42	53
Manual Dexterity	39	41	53
Finger Dexterity	37	42	53
Oral Expression	53	42	50
Deductive Reasoning	44	37	50
Auditory Attention	44	46	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Paper Goods Machine Setters, Operators, and Tenders	Importance
Operation and Control	55	60	75
Critical Thinking	28	60	74
Equipment Maintenance	43	58	74
Time Management	40	48	71
Quality Control Analysis	36	50	70
Reading Comprehension	45	54	69
Learning Strategies	52	64	69

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Paper Goods Machine Setters, Operators, and Tenders	Importance
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Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Paper Goods Machine Setters, Operators, and Tenders	Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Paper Goods Machine Setters, Operators, and Tenders
10+ years	0%	0%	Doctoral	0%	0%
8-10 years	0%	3%	Professional Degree	0%	0%
6-8 years	0%	0%	Post-Masters Cert	0%	0%
4-6 years	0%	0%	Master's Degree	0%	0%
2-4 years	19%	0%	Post-Bachelor Cert	0%	0%
1-2 years	19%	41%	Bachelors	0%	0%
6-12 months	34%	1%	AA or Equiv	0%	0%
3-6 months	17%	5%	Some College	0%	0%
1-3 months	0%	16%	Post-Secondary Certificate	3%	0%
0-1 month	3%	3%	High School Diploma or GED	96%	74%
None	4%	27%	No HSD or GED	0%	24%

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Paper Goods Machine Setters, Operators, and Tenders

Most Common Educational/Training Requirement:

Moderate-term on-the-job training

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Job Zone Comparison

2 - Job Zone Two: Some Preparation Needed

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Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

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These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

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Tasks

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Core Tasks

Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.

Specific Tasks

Occupation Specific Tasks:

- Calculate amounts of materials to be loaded into furnaces, adjusting amounts as necessary for specific conditions.
- Clean, lubricate, and adjust equipment, using scrapers, solvents, air hoses, oil, and hand tools.
- Confer with supervisors or other equipment operators in order to report equipment malfunctions or to resolve production problems.
- Direct crane operators and crew members to load vessels with materials to be processed.
- Examine or test samples of processed substances, or collect samples for laboratory testing, in order to ensure conformance to specifications.
- Feed fuel, such as coal and coke, into fireboxes or onto conveyors, and remove ashes from furnaces, using shovels and buckets.
- Load equipment receptacles or conveyors with material to be processed, by hand or using hoists.

Paper Goods Machine Setters, Operators, and Tenders

Core Tasks

Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.

Specific Tasks

Occupation Specific Tasks:

- Adjust guide assemblies, forming bars, and folding mechanisms according to specifications, using hand tools.
- Cut products to specified dimensions, using hand or power cutters.
- Disassemble machines to maintain, repair, or replace broken or worn parts, using hand or power tools.
- Examine completed work to detect defects and verify conformance to work orders, and adjust machinery as necessary to correct production problems.
- Fill glue and paraffin reservoirs, and position rollers to dispense glue onto paperboard.
- Install attachments to machines for gluing, folding, printing, or cutting.
- Lift tote boxes of finished cartons, and dump cartons into feed hoppers.
- Load automatic stapling mechanisms.
- Measure, space, and set saw blades, cutters, and perforators, according to product specifications.
- Monitor finished cartons as they drop from forming machines into rotating hoppers and then into gravity feed chutes, in order to prevent jamming.



- Melt or refine metal before casting, calculating required temperatures, and observe metal color and adjust controls as necessary in order to maintain required temperatures.
- Monitor equipment operation, gauges, and panel lights in order to detect deviations from standards.
- Press and adjust controls in order to activate, set, and regulate equipment according to specifications.
- Read and interpret work orders and instructions in order to determine work assignments, process specifications, and production schedules.
- Record gauge readings, test results, and shift production in log books.
- Remove products from equipment, manually or using hoists, and prepare them for storage, shipment, or additional processing.
- Replace worn or defective equipment parts, using hand tools.
- Sprinkle chemicals on the surface of molten metal in order to bring impurities to surface and remove impurities, using strainers.
- Stop equipment and clear blockages or jams, using fingers, wire, or hand tools.
- Transport materials and products to and from work areas, manually or using carts, handtrucks, or hoists.
- Weigh or measure specified amounts of ingredients or materials for processing, using devices such as scales and calipers.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- apply cleaning solvents
- clean equipment or machinery
- collect samples for testing
- confer with engineering, technical or manufacturing personnel
- examine products or work to verify conformance to specifications
- load or unload material or workpiece into machinery
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- maintain production or work records
- measure, weigh, or count products or materials
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate chemical processing equipment
- operate glass or stone working equipment/machinery
- operate hoist, winch, or hydraulic boom
- operate laundering or dry cleaning equipment

- Observe operation of various machines to detect and correct machine malfunctions such as improper forming, glue flow, or pasteboard tension.
- Place rolls of paper or cardboard on machine feedtracks, and thread paper through gluing, coating, and slitting rollers.
- Remove finished cores, and stack or place them on conveyors for transfer to other work areas.
- Stamp products with information such as dates, using hand stamps or automatic stamping devices.
- Start machines and move controls to regulate tension on pressure rolls, to synchronize speed of machine components, and to adjust temperatures of glue or paraffin.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- examine products or work to verify conformance to specifications
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- load, unload, or stack containers, materials, or products
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate pulp or paper making equipment
- read specifications
- read work order, instructions, formulas, or processing charts
- set up production equipment or machinery
- understand technical operating, service or repair manuals
- use hand or power tools
- use precision measuring tools or equipment



- operate metal or plastic fabricating equipment/machinery
- operate ore refining/foundry equipment/machinery
- operate pulp or paper making equipment
- operate textile production equipment/machinery
- operate woodworking equipment/machinery
- read work order, instructions, formulas, or processing charts
- test manufactured products or materials
- understand technical operating, service or repair manuals
- use hand or power tools
- use precision measuring tools or equipment

Labor Market Comparison

Maine Department of Labor.

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Paper Goods Machine Setters, Operators, and Tenders	Difference
Median Wage	\$ 32,980	\$ 38,230	\$ 5,250
10th Percentile Wage	\$ 22,430	\$ 25,850	\$ 3,420
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 37,570	\$ 45,200	\$ 7,630
90th Percentile Wage	\$ 51,800	\$ 51,680	\$(120)
Mean Wage	\$ 34,280	\$ 38,330	\$ 4,050
Total Employment - 2607	300	910	610
Employment Base - 2006	314	951	637
Projected Employment - 2616	259	700	441
Projected Job Growth - 2006-2616	-17.5 %	-26.4 %	-8.9 %
Projected Annual Openings - 2006-2616	9	23	14
Special			

Special Occupations:

National Job Posting Trends

Trend for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Paper Goods Machine Setters, Operators, and Tenders



Programs

No information on programs or the occupation.

Maine Statewide Promotion Opportunities for Furnace, Kiln, Oven, Drier, and Kettle Operators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	100	2	300	\$32,980.00	\$0.00	-18%	9	
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	83	2	910	\$38,230.00	\$5,250.00	-26%	23	
51-4034.00	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	80	3	110	\$34,350.00	\$1,370.00	-9%	2	
51-9023.00	Mixing and Blending Machine Setters, Operators, and Tenders	80	1	420	\$36,040.00	\$3,060.00	-9%	7	
51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	79	2	120	\$36,960.00	\$3,980.00	2%	3	



51-4032.00	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	78	2	100	\$33,030.00	\$50.00	-22%	2	
51-9121.00	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	78	2	850	\$38,860.00	\$5,880.00	-26%	19	
51-4121.06	Welders, Cutters, and Welder Fitters	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★
43-5053.00	Postal Service Mail Sorters, Processors, and Processing Machine Operators	77	2	970	\$41,950.00	\$8,970.00	-12%	10	
51-4121.07	Solderers and Brazers	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★
47-5021.00	Earth Drillers, Except Oil and Gas	76	3	140	\$37,470.00	\$4,490.00	2%	4	
51-4011.00	Computer-Controlled Machine Tool Operators, Metal and Plastic	76	2	720	\$40,490.00	\$7,510.00	6%	12	
51-2091.00	Fiberglass Laminators and Fabricators	75		440	\$33,960.00	\$980.00	5%	11	
51-4192.00	Lay-Out Workers, Metal and Plastic	75	2	180	\$43,870.00	\$10,890.00	-24%	3	
51-4041.00	Machinists	74	3	1,860	\$41,560.00	\$8,580.00	4%	35	★

Special Occupations:

Top Industries for Paper Goods Machine Setters, Operators, and Tenders

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Converted paper product manufacturing	322200	60.48%	68,412	57,411	-16.08%
Pulp, paper, and paperboard mills	322100	21.93%	24,800	17,202	-30.64%
Printing and related support activities	323100	8.22%	9,293	7,363	-20.77%
Newspaper publishers	511110	1.36%	1,536	1,316	-14.33%
Plastics product manufacturing	326100	1.27%	1,439	1,525	6.00%
Wholesale electronic markets and agents and brokers	425100	0.67%	762	865	13.48%
Employment services	561300	0.55%	618	783	26.56%
Animal slaughtering and processing	311600	0.46%	521	595	14.13%
Advertising and related services	541800	0.40%	448	505	12.83%
Paper and paper product merchant wholesalers	424100	0.39%	440	470	6.83%



Other general purpose machinery manufacturing	333900	0.19%	219	198	-9.73%
Miscellaneous durable goods merchant wholesalers	423900	0.09%	100	114	14.81%
Warehousing and storage	493100	0.07%	76	101	33.58%
Other electrical equipment and component manufacturing	335900	0.06%	69	64	-7.34%
Fruit and vegetable preserving and specialty food manufacturing	311400	0.05%	61	55	-9.33%

Top Industries for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Self-employed workers, primary job	000601	14.95%	4,723	5,032	6.54%
Rubber product manufacturing	326200	10.31%	3,259	2,301	-29.39%
Clay product and refractory manufacturing	327100	9.28%	2,933	2,686	-8.41%
Glass and glass product manufacturing	327200	9.22%	2,913	2,542	-12.76%
Veneer, plywood, and engineered wood product manufacturing	321200	4.59%	1,449	1,578	8.89%
Sawmills and wood preservation	321100	4.43%	1,399	1,122	-19.82%
Pulp, paper, and paperboard mills	322100	3.81%	1,204	835	-30.64%
Other wood product manufacturing	321900	3.57%	1,127	1,062	-5.77%
Cement and concrete product manufacturing	327300	3.32%	1,049	1,138	8.55%
Aerospace product and parts manufacturing	336400	2.15%	681	693	1.84%
Foundries	331500	2.07%	654	474	-27.49%
Nonmetallic mineral mining and quarrying	212300	1.91%	604	648	7.32%
Nonferrous metal (except aluminum) production and processing	331400	1.78%	564	394	-30.05%
Iron and steel mills and ferroalloy manufacturing	331100	1.44%	456	307	-32.68%
Plastics product manufacturing	326100	1.31%	413	438	6.00%



TORQ Analysis of Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders to Food Batchmakers

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	51-9051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Food Batchmakers	51-3092.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:					83						
Ability TORQ		Skills TORQ		Knowledge TORQ							
Level	89	Level	81	Level	79						
Gaps To Narrow if Possible		Upgrade These Skills		Knowledge to Add							
Ability	Level	Gap	Imp	Skill	Level	Gap	Imp	Knowledge	Level	Gap	Imp
No Critical Gaps Recorded!				No Skills Upgrade Required!				No Knowledge Upgrades Required!			
LEVEL and IMPT (IMPORTANCE) refer to the Target Food Batchmakers. GAP refers to level difference between Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Food Batchmakers.											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Food Batchmakers	Importance
Information Ordering	44	42	68
Near Vision	53	50	62
Manual Dexterity	39	39	59
Control Precision	50	44	59
Trunk Strength	42	42	59
Problem Sensitivity	48	39	56
Oral Expression	53	53	53
Category Flexibility	42	39	53
Oral Comprehension	53	46	50
Written Comprehension	46	37	50
Deductive Reasoning	44	37	50
Arm-Hand Steadiness	39	30	50
Auditory Attention	44	42	50
Speech Recognition	35	34	50
Skill Level Comparison - Abilities with importance scores over 69			



Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Food Batchmakers	Importance
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Food Batchmakers	Importance

Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
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10+ years	0%	0%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
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1-3 months	0%	6%	Post-Secondary Certificate	3%	0%
0-1 month	3%	32%	High School Diploma or GED	96%	66%
None	4%	42%	No HSD or GED	0%	33%

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Food Batchmakers
Most Common Educational/Training Requirement:	
Moderate-term on-the-job training	Short-term on-the-job training
Job Zone Comparison	
2 - Job Zone Two: Some Preparation Needed	2 - Job Zone Two: Some Preparation Needed
Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.	Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.
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Tasks

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Food Batchmakers
Core Tasks	Core Tasks
Generalized Work Activities:	Generalized Work Activities:
<ul style="list-style-type: none"> Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles). Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, 	<ul style="list-style-type: none"> Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources. Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.



lifting, balancing, walking, stooping, and handling of materials.

- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
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Specific Tasks

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- Confer with supervisors or other equipment operators in order to report equipment malfunctions or to resolve production problems.
- Direct crane operators and crew members to load vessels with materials to be processed.
- Examine or test samples of processed substances, or collect samples for laboratory testing, in order to ensure conformance to specifications.
- Feed fuel, such as coal and coke, into fireboxes or onto conveyors, and remove ashes from furnaces, using shovels and buckets.
- Load equipment receptacles or conveyors with material to be processed, by hand or using hoists.
- Melt or refine metal before casting, calculating required temperatures; and observe metal color and adjust controls as necessary in order to maintain required temperatures.
- Monitor equipment operation, gauges, and panel lights in order to detect deviations from standards.
- Press and adjust controls in order to activate, set, and regulate equipment according to specifications.
- Read and interpret work orders and instructions in order to determine work assignments, process specifications, and production schedules.
- Record gauge readings, test results, and shift production in log books.
- Remove products from equipment, manually or using hoists, and prepare them for storage, shipment, or additional processing.
- Replace worn or defective equipment parts, using hand tools.

Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

Specific Tasks

Occupation Specific Tasks:

- Clean and sterilize vats and factory processing areas.
- Cool food product batches on slabs or in water-cooled kettles.
- Determine mixing sequences, based on knowledge of temperature effects and of the solubility of specific ingredients.
- Examine, feel, and taste product samples during production to evaluate quality, color, texture, flavor, and bouquet, and document the results.
- Fill processing or cooking containers, such as kettles, rotating cookers, pressure cookers, or vats, with ingredients, by opening valves, by starting pumps or injectors, or by hand.
- Follow recipes to produce food products of specified flavor, texture, clarity, bouquet, or color.
- Formulate or modify recipes for specific kinds of food products.
- Give directions to other workers who are assisting in the batchmaking process.
- Grade food products according to government regulations or according to type, color, bouquet, and moisture content.
- Homogenize or pasteurize material to prevent separation or to obtain prescribed butterfat content, using a homogenizing device.
- Inspect and pack the final product.
- Inspect vats after cleaning to ensure that fermentable residue has been removed.
- Manipulate products, by hand or using machines, to separate, spread, knead, spin, cast, cut, pull, or roll products.
- Mix or blend ingredients, according to recipes, using a paddle or an agitator, or by controlling vats that heat and mix ingredients.
- Modify cooking and forming operations based on the results of sampling processes, adjusting time cycles and ingredients to achieve desired qualities, such as firmness or texture.
- Observe and listen to equipment to detect possible malfunctions, such as leaks or plugging, and report malfunctions or undesirable tastes to supervisors.



- Sprinkle chemicals on the surface of molten metal in order to bring impurities to surface and remove impurities, using strainers.
- Stop equipment and clear blockages or jams, using fingers, wire, or hand tools.
- Transport materials and products to and from work areas, manually or using carts, handtrucks, or hoists.
- Weigh or measure specified amounts of ingredients or materials for processing, using devices such as scales and calipers.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- apply cleaning solvents
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- collect samples for testing
- confer with engineering, technical or manufacturing personnel
- examine products or work to verify conformance to specifications
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- operate laundering or dry cleaning equipment
- operate metal or plastic fabricating equipment/machinery
- operate ore refining/foundry equipment/machinery
- operate pulp or paper making equipment
- operate textile production equipment/machinery
- operate woodworking equipment/machinery
- read work order, instructions, formulas, or processing charts
- test manufactured products or materials
- understand technical operating, service or repair manuals
- use hand or power tools
- use precision measuring tools or equipment

- Observe gauges and thermometers to determine if the mixing chamber temperature is within specified limits, and turn valves to control the temperature.
- Operate refining machines to reduce the particle size of cooked batches.
- Place products on carts or conveyors to transfer them to the next stage of processing.
- Press switches and turn knobs to start, adjust, and regulate equipment such as beaters, extruders, discharge pipes, and salt pumps.
- Record production and test data for each food product batch, such as the ingredients used, temperature, test results, and time cycle.
- Select and measure or weigh ingredients, using English or metric measures and balance scales.
- Set up, operate, and tend equipment that cooks, mixes, blends, or processes ingredients in the manufacturing of food products, according to formulas or recipes.
- Test food product samples for moisture content, acidity level, specific gravity, or butter-fat content, and continue processing until desired levels are reached.
- Turn valve controls to start equipment and to adjust operation to maintain product quality.

Detailed Tasks

Detailed Work Activities:

- compute production, construction, or installation specifications
- examine products or work to verify conformance to specifications
- grade, classify, or sort products according to specifications
- load or unload material or workpiece into machinery
- maintain production or work records
- measure, weigh, or count products or materials
- operate food processing production equipment/machinery
- perform safety inspections in manufacturing or industrial setting
- set up production equipment or machinery
- signal directions or warnings to coworkers
- understand food processing directions
- use precision measuring tools or equipment

Labor Market Comparison



Maine Department of Labor.

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Food Batchmakers	Difference
Median Wage	\$ 32,980	\$ 25,410	\$(7,570)
10th Percentile Wage	\$ 22,430	\$ 16,840	\$(5,590)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 37,570	\$ 29,620	\$(7,950)
90th Percentile Wage	\$ 51,800	\$ 32,900	\$(18,900)
Mean Wage	\$ 34,280	\$ 25,070	\$(9,210)
Total Employment - 2607	300	640	340
Employment Base - 2006	314	562	248
Projected Employment - 2616	259	520	261
Projected Job Growth - 2006-2616	-17.5 %	-7.5 %	10.0 %
Projected Annual Openings - 2006-2616	9	14	5
Special			

Special Occupations:

National Job Posting Trends

Trend for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Food Batchmakers

Data from [Indeed](http://Indeed.com)

Programs

Related Programs



Agricultural and Food Products Processing Operatio

Agricultural and Food Products Processing. A program that prepares individuals to receive, inspect, store, process, and package agricultural products in the form of human food consumables, animal or plant food, or other industrial products. Includes instruction in the nutrient and industrial properties of various agricultural products; logistics and storage procedures; chemical and mechanical processing operations; packaging; safety and health requirements; and related technical and business principles.

No information on schools for the program

Foodservice Systems Administration/Management

Foodservice Systems Administration/Management. A program that focuses on the principles and practices relating to the administration of food service systems in institutional settings, and that prepares individuals to manage such operations in public and private facilities. Includes instruction in human nutrition, food safety, the design and organization of food service systems, purchasing, personnel management, and related business practices.

No information on schools for the program

Maine Statewide Promotion Opportunities for Furnace, Kiln, Oven, Drier, and Kettle Operators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	100	2	300	\$32,980.00	\$0.00	-18%	9	
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	83	2	910	\$38,230.00	\$5,250.00	-26%	23	
51-4034.00	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	80	3	110	\$34,350.00	\$1,370.00	-9%	2	
51-9023.00	Mixing and Blending Machine Setters, Operators, and Tenders	80	1	420	\$36,040.00	\$3,060.00	-9%	7	
51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	79	2	120	\$36,960.00	\$3,980.00	2%	3	
51-4032.00	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	78	2	100	\$33,030.00	\$50.00	-22%	2	
51-9121.00	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	78	2	850	\$38,860.00	\$5,880.00	-26%	19	
51-4121.06	Welders, Cutters, and Welder Fitters	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★



43-5053.00	Postal Service Mail Sorters, Processors, and Processing Machine Operators	77	2	970	\$41,950.00	\$8,970.00	-12%	10	
51-4121.07	Solderers and Brazers	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★
47-5021.00	Earth Drillers, Except Oil and Gas	76	3	140	\$37,470.00	\$4,490.00	2%	4	
51-4011.00	Computer-Controlled Machine Tool Operators, Metal and Plastic	76	2	720	\$40,490.00	\$7,510.00	6%	12	
51-2091.00	Fiberglass Laminators and Fabricators	75		440	\$33,960.00	\$980.00	5%	11	
51-4192.00	Lay-Out Workers, Metal and Plastic	75	2	180	\$43,870.00	\$10,890.00	-24%	3	
51-4041.00	Machinists	74	3	1,860	\$41,560.00	\$8,580.00	4%	35	★

Special Occupations:

Top Industries for Food Batchmakers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Bakeries and tortilla manufacturing	311800	21.01%	19,946	22,412	12.36%
Other food manufacturing	311900	12.34%	11,715	13,512	15.34%
Fruit and vegetable preserving and specialty food manufacturing	311400	10.88%	10,325	10,298	-0.27%
Dairy product manufacturing	311500	10.71%	10,167	11,064	8.82%
Sugar and confectionery product manufacturing	311300	8.85%	8,400	7,782	-7.35%
Animal slaughtering and processing	311600	8.01%	7,601	9,543	25.54%
Grocery stores	445100	6.94%	6,585	7,903	20.02%
Grocery and related product wholesalers	424400	4.24%	4,021	4,836	20.28%
Grain and oilseed milling	311200	3.62%	3,437	3,297	-4.07%
Animal food manufacturing	311100	2.08%	1,973	1,882	-4.58%
Self-employed workers, primary job	000601	1.72%	1,636	1,917	17.19%
Limited-service eating places	722200	1.66%	1,574	1,888	19.89%
Employment services	561300	1.66%	1,574	2,192	39.22%
Specialty food stores	445200	1.03%	975	1,020	4.60%
Seafood product preparation and packaging	311700	0.92%	869	852	-1.88%

Top Industries for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
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Self-employed workers, primary job	000601	14.95%	4,723	5,032	6.54%
Rubber product manufacturing	326200	10.31%	3,259	2,301	-29.39%
Clay product and refractory manufacturing	327100	9.28%	2,933	2,686	-8.41%
Glass and glass product manufacturing	327200	9.22%	2,913	2,542	-12.76%
Veneer, plywood, and engineered wood product manufacturing	321200	4.59%	1,449	1,578	8.89%
Sawmills and wood preservation	321100	4.43%	1,399	1,122	-19.82%
Pulp, paper, and paperboard mills	322100	3.81%	1,204	835	-30.64%
Other wood product manufacturing	321900	3.57%	1,127	1,062	-5.77%
Cement and concrete product manufacturing	327300	3.32%	1,049	1,138	8.55%
Aerospace product and parts manufacturing	336400	2.15%	681	693	1.84%
Foundries	331500	2.07%	654	474	-27.49%
Nonmetallic mineral mining and quarrying	212300	1.91%	604	648	7.32%
Nonferrous metal (except aluminum) production and processing	331400	1.78%	564	394	-30.05%
Iron and steel mills and ferroalloy manufacturing	331100	1.44%	456	307	-32.68%
Plastics product manufacturing	326100	1.31%	413	438	6.00%



TORQ Analysis of Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders to Machine Feeders and Offbearers

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	51-9051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Machine Feeders and Offbearers	53-7063.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:								82			
Ability TORQ			Skills TORQ				Knowledge TORQ				
Level		83	Level		82	Level		81			
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Rate Control	44	10	56	No Skills Upgrade Required!				No Knowledge Upgrades Required!			
Finger Dexterity	46	9	56								
Manual Dexterity	46	7	59								
Arm-Hand Steadiness	44	5	65								
Multilimb Coordination	46	5	59								
Static Strength	46	5	50								
Flexibility of Closure	41	4	50								
Control Precision	53	3	65								
Trunk Strength	44	2	53								
LEVEL and IMPT (IMPORTANCE) refer to the Target Machine Feeders and Offbearers. GAP refers to level difference between Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Machine Feeders and Offbearers.											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Machine Feeders and Offbearers	Importance
Arm-Hand Steadiness	39	44	65
Control Precision	50	53	65
Manual Dexterity	39	46	59
Multilimb Coordination	41	46	59
Reaction Time	50	48	59
Near Vision	53	46	59
Problem Sensitivity	48	39	56



Ability	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Machine Feeders and Offbearers	Importance
Finger Dexterity	37	46	56
Rate Control	34	44	56
Oral Comprehension	53	42	53
Information Ordering	44	39	53
Perceptual Speed	50	44	53
Trunk Strength	42	44	53
Oral Expression	53	42	50
Deductive Reasoning	44	37	50
Inductive Reasoning	44	37	50
Category Flexibility	42	39	50
Flexibility of Closure	37	41	50
Selective Attention	51	44	50
Static Strength	41	46	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Machine Feeders and Offbearers	Importance
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Machine Feeders and Offbearers	Importance

Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Machine Feeders and Offbearers	Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Machine Feeders and Offbearers
10+ years	0%	0%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	0%	0%	Post-Masters Cert	0%	0%
4-6 years	0%	0%	Master's Degree	0%	0%
2-4 years	19%	0%	Post-Bachelor Cert	0%	0%
1-2 years	19%	8%	Bachelors	0%	0%
6-12 months	34%	0%	AA or Equiv	0%	7%
3-6 months	17%	11%	Some College	0%	0%
1-3 months	0%	3%	Post-Secondary Certificate	3%	8%
0-1 month	3%	26%	High School Diploma or GED	96%	61%
None	4%	48%	No HSD or GED	0%	22%

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Machine Feeders and Offbearers

Most Common Educational/Training Requirement:

Moderate-term on-the-job training

Short-term on-the-job training

Job Zone Comparison

2 - Job Zone Two: Some Preparation Needed

1 - Job Zone One: Little or No Preparation Needed

Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

No previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a cashier even if he/she has never worked before.



These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

These occupations may require a high school diploma or GED certificate. Some may require a formal training course to obtain a license.

Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.

Tasks

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Core Tasks

Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.

Specific Tasks

Occupation Specific Tasks:

- Calculate amounts of materials to be loaded into furnaces, adjusting amounts as necessary for specific conditions.
- Clean, lubricate, and adjust equipment, using scrapers, solvents, air hoses, oil, and hand tools.
- Confer with supervisors or other equipment operators in order to report equipment malfunctions or to resolve production problems.
- Direct crane operators and crew members to load vessels with materials to be processed.
- Examine or test samples of processed substances, or collect samples for laboratory testing, in order to ensure conformance to specifications.
- Feed fuel, such as coal and coke, into fireboxes or onto conveyors, and remove ashes from furnaces, using shovels and buckets.
- Load equipment receptacles or conveyors with material to be processed, by hand or using hoists.

Machine Feeders and Offbearers

Core Tasks

Generalized Work Activities:

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).

Specific Tasks

Occupation Specific Tasks:

- Add chemicals, solutions, or ingredients to machines or equipment as required by the manufacturing process.
- Clean and maintain machinery, equipment, and work areas to ensure proper functioning and safe working conditions.
- Fasten, package, or stack materials and products, using hand tools and fastening equipment.
- Identify and mark materials, products, and samples, following instructions.
- Inspect materials and products for defects, and to ensure conformance to specifications.
- Load materials and products into machines and equipment, or onto conveyors, using hand tools and moving devices.
- Open and close gates of belt and pneumatic conveyors on machines that are fed directly from preceding machines.
- Push dual control buttons and move controls in order to start, stop, or adjust machinery and equipment.
- Record production and operational data, such



- Melt or refine metal before casting, calculating required temperatures; and observe metal color and adjust controls as necessary in order to maintain required temperatures.
- Monitor equipment operation, gauges, and panel lights in order to detect deviations from standards.
- Press and adjust controls in order to activate, set, and regulate equipment according to specifications.
- Read and interpret work orders and instructions in order to determine work assignments, process specifications, and production schedules.
- Record gauge readings, test results, and shift production in log books.
- Remove products from equipment, manually or using hoists, and prepare them for storage, shipment, or additional processing.
- Replace worn or defective equipment parts, using hand tools.
- Sprinkle chemicals on the surface of molten metal in order to bring impurities to surface and remove impurities, using strainers.
- Stop equipment and clear blockages or jams, using fingers, wire, or hand tools.
- Transport materials and products to and from work areas, manually or using carts, handtrucks, or hoists.
- Weigh or measure specified amounts of ingredients or materials for processing, using devices such as scales and calipers.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- apply cleaning solvents
- clean equipment or machinery
- collect samples for testing
- confer with engineering, technical or manufacturing personnel
- examine products or work to verify conformance to specifications
- load or unload material or workpiece into machinery
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- maintain production or work records
- measure, weigh, or count products or materials
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate chemical processing equipment
- operate glass or stone working equipment/machinery
- operate hoist, winch, or hydraulic boom

as amount or materials processed.

- Remove materials and products from machines and equipment, and place them in boxes, trucks or conveyors, using hand tools and moving devices.
- Shovel or scoop materials into containers, machines, or equipment for processing, storage, or transport.
- Transfer materials and products to and from machinery and equipment, using industrial trucks or hand trucks.
- Weigh or measure materials or products to ensure conformance to specifications.

Detailed Tasks

Detailed Work Activities:

- attach or mark identification onto products or containers
- clean equipment or machinery
- clean rooms or work areas
- examine products or work to verify conformance to specifications
- load or unload material or workpiece into machinery
- load, unload, or stack containers, materials, or products
- maintain production or work records
- measure, weigh, or count products or materials
- move or fit heavy objects
- operate hoist, winch, or hydraulic boom
- perform safety inspections in manufacturing or industrial setting
- sort manufacturing materials or products
- use hand or power tools



- operate laundering or dry cleaning equipment
- operate metal or plastic fabricating equipment/machinery
- operate ore refining/foundry equipment/machinery
- operate pulp or paper making equipment
- operate textile production equipment/machinery
- operate woodworking equipment/machinery
- read work order, instructions, formulas, or processing charts
- test manufactured products or materials
- understand technical operating, service or repair manuals
- use hand or power tools
- use precision measuring tools or equipment

Labor Market Comparison

Maine Department of Labor.

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Machine Feeders and Offbearers	Difference
Median Wage	\$ 32,980	\$ 26,820	\$(6,160)
10th Percentile Wage	\$ 22,430	\$ 19,120	\$(3,310)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 37,570	\$ 29,840	\$(7,730)
90th Percentile Wage	\$ 51,800	\$ 35,200	\$(16,600)
Mean Wage	\$ 34,280	\$ 26,870	\$(7,410)
Total Employment - 2607	300	480	180
Employment Base - 2006	314	485	171
Projected Employment - 2616	259	378	119
Projected Job Growth - 2006-2616	-17.5 %	-22.1 %	-4.6 %
Projected Annual Openings - 2006-2616	9	9	0
Special			

Special Occupations:

National Job Posting Trends

Trend for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Machine Feeders and Offbearers



Programs

No information on programs or the occupation.

Maine Statewide Promotion Opportunities for Furnace, Kiln, Oven, Drier, and Kettle Operators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	100	2	300	\$32,980.00	\$0.00	-18%	9	
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51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	79	2	120	\$36,960.00	\$3,980.00	2%	3	



51-4032.00	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	78	2	100	\$33,030.00	\$50.00	-22%	2	
51-9121.00	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	78	2	850	\$38,860.00	\$5,880.00	-26%	19	
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51-4011.00	Computer-Controlled Machine Tool Operators, Metal and Plastic	76	2	720	\$40,490.00	\$7,510.00	6%	12	
51-2091.00	Fiberglass Laminators and Fabricators	75		440	\$33,960.00	\$980.00	5%	11	
51-4192.00	Lay-Out Workers, Metal and Plastic	75	2	180	\$43,870.00	\$10,890.00	-24%	3	
51-4041.00	Machinists	74	3	1,860	\$41,560.00	\$8,580.00	4%	35	★

Special Occupations:

Top Industries for Machine Feeders and Offbearers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Printing and related support activities	323100	8.45%	12,487	8,904	-28.69%
Newspaper publishers	511110	6.58%	9,719	7,493	-22.90%
Converted paper product manufacturing	322200	6.30%	9,315	7,036	-24.47%
Other wood product manufacturing	321900	5.62%	8,311	7,048	-15.19%
Plastics product manufacturing	326100	4.99%	7,369	7,030	-4.60%
Sawmills and wood preservation	321100	4.82%	7,129	5,144	-27.84%
Veneer, plywood, and engineered wood product manufacturing	321200	4.54%	6,716	6,582	-2.00%
Animal slaughtering and processing	311600	3.07%	4,541	4,664	2.71%
Pharmaceutical and medicine manufacturing	325400	2.77%	4,088	4,637	13.42%
Bakeries and tortilla manufacturing	311800	2.52%	3,716	3,417	-8.07%



Coating, engraving, heat treating, and allied activities	332800	1.91%	2,829	2,087	-26.23%
Pulp, paper, and paperboard mills	322100	1.76%	2,595	1,620	-37.57%
Fruit and vegetable preserving and specialty food manufacturing	311400	1.62%	2,389	1,949	-18.40%
Household and institutional furniture manufacturing	337120	1.43%	2,112	1,447	-31.52%
Glass and glass product manufacturing	327200	0.98%	1,450	1,139	-21.48%

Top Industries for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Self-employed workers, primary job	000601	14.95%	4,723	5,032	6.54%
Rubber product manufacturing	326200	10.31%	3,259	2,301	-29.39%
Clay product and refractory manufacturing	327100	9.28%	2,933	2,686	-8.41%
Glass and glass product manufacturing	327200	9.22%	2,913	2,542	-12.76%
Veneer, plywood, and engineered wood product manufacturing	321200	4.59%	1,449	1,578	8.89%
Sawmills and wood preservation	321100	4.43%	1,399	1,122	-19.82%
Pulp, paper, and paperboard mills	322100	3.81%	1,204	835	-30.64%
Other wood product manufacturing	321900	3.57%	1,127	1,062	-5.77%
Cement and concrete product manufacturing	327300	3.32%	1,049	1,138	8.55%
Aerospace product and parts manufacturing	336400	2.15%	681	693	1.84%
Foundries	331500	2.07%	654	474	-27.49%
Nonmetallic mineral mining and quarrying	212300	1.91%	604	648	7.32%
Nonferrous metal (except aluminum) production and processing	331400	1.78%	564	394	-30.05%
Iron and steel mills and ferroalloy manufacturing	331100	1.44%	456	307	-32.68%
Plastics product manufacturing	326100	1.31%	413	438	6.00%



TORQ Analysis of Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders to Sawing Machine Setters, Operators, and Tenders, Wood

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	51-9051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Sawing Machine Setters, Operators, and Tenders, Wood	51-7041.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS							
Grand TORQ:					82		
Ability TORQ		Skills TORQ		Knowledge TORQ			
Level	85	Level	78	Level	82		
Gaps To Narrow if Possible			Upgrade These Skills		Knowledge to Add		
Ability	Level	Gap	Imp	Skill	Level	Gap	Imp
Arm-Hand Steadiness	48	9	72	No Skills Upgrade Required!		No Knowledge Upgrades Required!	
Finger Dexterity	42	5	59				
Multilimb Coordination	46	5	53				
Manual Dexterity	42	3	56				
LEVEL and IMPT (IMPORTANCE) refer to the Target Sawing Machine Setters, Operators, and Tenders, Wood. GAP refers to level difference between Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Sawing Machine Setters, Operators, and Tenders, Wood.							

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Sawing Machine Setters, Operators, and Tenders, Wood	Importance
Arm-Hand Steadiness	39	48	72
Control Precision	50	50	72
Near Vision	53	46	62
Finger Dexterity	37	42	59
Oral Comprehension	53	48	56
Oral Expression	53	48	56
Manual Dexterity	39	42	56
Problem Sensitivity	48	42	53
Multilimb Coordination	41	46	53
Trunk Strength	42	41	53
Deductive Reasoning	44	39	50



Inductive Reasoning	44	39	50
Category Flexibility	42	41	50
Selective Attention	51	41	50
Rate Control	34	34	50
Speech Clarity	37	35	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Sawing Machine Setters, Operators, and Tenders, Wood	Importance
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Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Sawing Machine Setters, Operators, and Tenders, Wood	Importance
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Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Sawing Machine Setters, Operators, and Tenders, Wood	Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Sawing Machine Setters, Operators, and Tenders, Wood
10+ years	0%	1%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	0%	0%	Post-Masters Cert	0%	0%
4-6 years	0%	0%	Master's Degree	0%	0%
2-4 years	19%	8%	Post-Bachelor Cert	0%	0%
1-2 years	19%	11%	Bachelors	0%	0%
6-12 months	34%	13%	AA or Equiv	0%	0%
3-6 months	17%	12%	Some College	0%	1%
1-3 months	0%	12%	Post-Secondary Certificate	3%	10%
0-1 month	3%	11%	High School Diploma or GED	96%	40%
None	4%	29%	No HSD or GED	0%	48%

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Sawing Machine Setters, Operators, and Tenders, Wood

Most Common Educational/Training Requirement:

Moderate-term on-the-job training

Moderate-term on-the-job training

Job Zone Comparison

2 - Job Zone Two: Some Preparation Needed
 Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty. These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed. Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

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Tasks

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Sawing Machine Setters, Operators, and Tenders, Wood
Core Tasks	Core Tasks



Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.

Specific Tasks

Occupation Specific Tasks:

- Calculate amounts of materials to be loaded into furnaces, adjusting amounts as necessary for specific conditions.
- Clean, lubricate, and adjust equipment, using scrapers, solvents, air hoses, oil, and hand tools.
- Confer with supervisors or other equipment operators in order to report equipment malfunctions or to resolve production problems.
- Direct crane operators and crew members to load vessels with materials to be processed.
- Examine or test samples of processed substances, or collect samples for laboratory testing, in order to ensure conformance to specifications.
- Feed fuel, such as coal and coke, into fireboxes or onto conveyors, and remove ashes from furnaces, using shovels and buckets.
- Load equipment receptacles or conveyors with material to be processed, by hand or using hoists.
- Melt or refine metal before casting, calculating required temperatures; and observe metal color and adjust controls as necessary in order to maintain required temperatures.
- Monitor equipment operation, gauges, and panel lights in order to detect deviations from standards.
- Press and adjust controls in order to activate, set, and regulate equipment according to specifications.
- Read and interpret work orders and instructions in order to determine work

Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.

Specific Tasks

Occupation Specific Tasks:

- Adjust bolts, clamps, stops, guides, and table angles and heights, using hand tools.
- Adjust saw blades, using wrenches and rulers, or by turning handwheels or pressing pedals, levers, or panel buttons.
- Clear machine jams, using hand tools.
- Count, sort, and stack finished workpieces.
- Cut grooves, bevels, and miters, saw curved or irregular designs, and sever or shape metals, according to specifications or work orders.
- Dispose of waste material after completing work assignments.
- Examine blueprints, drawings, work orders, or patterns to determine equipment set-up and selection details, procedures to be used, and dimensions of final products.
- Examine logs or lumber in order to plan the best cuts.
- Guide workpieces against saws, saw over workpieces by hand, or operate automatic feeding devices to guide cuts.
- Inspect and measure workpieces to mark for cuts and to verify the accuracy of cuts, using rulers, squares, or caliper rules.
- Inspect stock for imperfections and to estimate grades or qualities of stock or workpieces.
- Lubricate and clean machines, using wrenches, grease guns, and solvents.
- Measure and mark stock for cuts.
- Monitor sawing machines, adjusting speed and tension and clearing jams to ensure proper operation.
- Mount and bolt sawing blades or attachments to machine shafts.



assignments, process specifications, and production schedules.

- Record gauge readings, test results, and shift production in log books.
- Remove products from equipment, manually or using hoists, and prepare them for storage, shipment, or additional processing.
- Replace worn or defective equipment parts, using hand tools.
- Sprinkle chemicals on the surface of molten metal in order to bring impurities to surface and remove impurities, using strainers.
- Stop equipment and clear blockages or jams, using fingers, wire, or hand tools.
- Transport materials and products to and from work areas, manually or using carts, handtrucks, or hoists.
- Weigh or measure specified amounts of ingredients or materials for processing, using devices such as scales and calipers.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- apply cleaning solvents
- clean equipment or machinery
- collect samples for testing
- confer with engineering, technical or manufacturing personnel
- examine products or work to verify conformance to specifications
- load or unload material or workpiece into machinery
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- maintain production or work records
- measure, weigh, or count products or materials
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate chemical processing equipment
- operate glass or stone working equipment/machinery
- operate hoist, winch, or hydraulic boom
- operate laundering or dry cleaning equipment
- operate metal or plastic fabricating equipment/machinery
- operate ore refining/foundry equipment/machinery
- operate pulp or paper making equipment
- operate textile production equipment/machinery
- operate woodworking equipment/machinery
- read work order, instructions, formulas, or processing charts
- test manufactured products or materials

attachments to machine shafts.

- Operate panelboards of saw and conveyor systems to move stock through processes, and to cut stock to specified dimensions.
- Position and clamp stock on tables, conveyors, or carriages, using hoists, guides, stops, dogs, wedges, and wrenches.
- Pull tables back against stops, and depress pedals to advance cutterheads that shape stock ends.
- Select saw blades, types and grades of stock, and cutting procedures to be used, according to work orders or supervisors' instructions.
- Set up, operate, or tend saws and machines that cut or trim wood to specified dimensions, such as circular saws, band saws, multiple-blade sawing machines, scroll saws, rip saws, and crozer machines.
- Sharpen blades or replace defective or worn blades and bands, using hand tools.
- Trim lumber to straighten rough edges and remove defects, using circular saws.
- Unclamp and remove finished workpieces from tables.
- Unload and roll logs from trucks to sawmill decks or to carriages, or move logs in ponds, using pike poles.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- clean equipment or machinery
- examine products or work to verify conformance to specifications
- fell or buck trees
- grade, classify, or sort products according to specifications
- inspect machinery or equipment to determine adjustments or repairs needed
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- load, unload, or stack containers, materials, or products
- maintain consistent production quality
- measure, weigh, or count products or materials
- move or fit heavy objects
- operate hoist, winch, or hydraulic boom
- operate woodworking equipment/machinery
- read blueprints
- read specifications
- read technical drawings
- read work order, instructions, formulas, or processing charts
- recognize wood species characteristics
- set up production equipment or machinery



- understand technical operating, service or repair manuals
- use hand or power tools
- use precision measuring tools or equipment

- sort manufacturing materials or products
- understand technical operating, service or repair manuals
- use chain saws
- use fire suppression equipment
- use hand or power tools
- use precision measuring tools or equipment

Labor Market Comparison

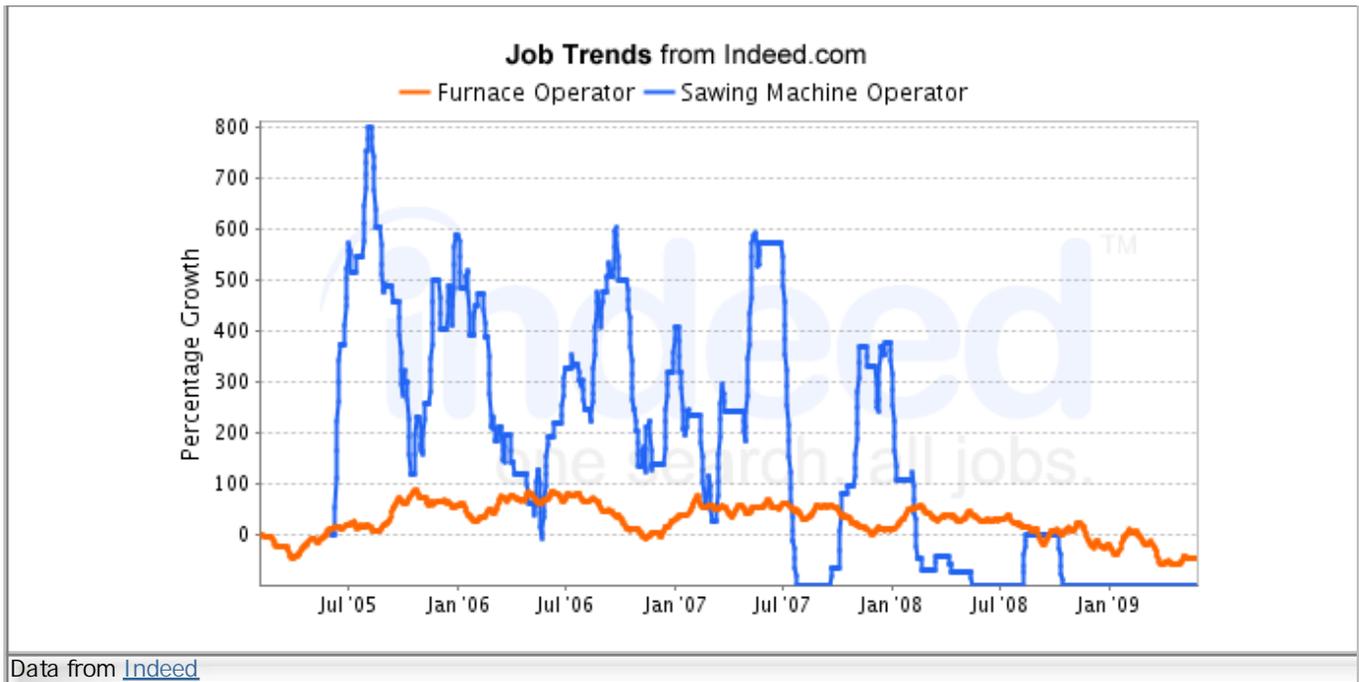
Maine Department of Labor.

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Sawing Machine Setters, Operators, and Tenders, Wood	Difference
Median Wage	\$ 32,980	\$ 24,790	\$(8,190)
10th Percentile Wage	\$ 22,430	\$ 18,890	\$(3,540)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 37,570	\$ 29,970	\$(7,600)
90th Percentile Wage	\$ 51,800	\$ 35,380	\$(16,420)
Mean Wage	\$ 34,280	\$ 25,920	\$(8,360)
Total Employment - 2607	300	700	400
Employment Base - 2006	314	765	451
Projected Employment - 2616	259	706	447
Projected Job Growth - 2006-2616	-17.5 %	-7.7 %	9.8 %
Projected Annual Openings - 2006-2616	9	15	6
Special			

Special Occupations:

National Job Posting Trends

Trend for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Sawing Machine Setters, Operators, and Tenders, Wood



Programs

Related Programs

Cabinet Maker and Millworker

Cabinetmaking and Millwork/Millwright. A program that prepares individuals to apply technical knowledge and skills to set up, operate and repair industrial woodworking machinery, and to use such machinery to design and fabricate wooden components and complete articles.

No information on schools for the program

Maine Statewide Promotion Opportunities for Furnace, Kiln, Oven, Drier, and Kettle Operators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	100	2	300	\$32,980.00	\$0.00	-18%	9	
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	83	2	910	\$38,230.00	\$5,250.00	-26%	23	
51-4034.00	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	80	3	110	\$34,350.00	\$1,370.00	-9%	2	
51-9023.00	Mixing and Blending Machine Setters, Operators, and Tenders	80	1	420	\$36,040.00	\$3,060.00	-9%	7	



51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	79	2	120	\$36,960.00	\$3,980.00	2%	3	
51-4032.00	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	78	2	100	\$33,030.00	\$50.00	-22%	2	
51-9121.00	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	78	2	850	\$38,860.00	\$5,880.00	-26%	19	
43-5053.00	Postal Service Mail Sorters, Processors, and Processing Machine Operators	77	2	970	\$41,950.00	\$8,970.00	-12%	10	
51-4121.07	Solderers and Brazers	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★
51-4121.06	Welders, Cutters, and Welder Fitters	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★
47-5021.00	Earth Drillers, Except Oil and Gas	76	3	140	\$37,470.00	\$4,490.00	2%	4	
51-4011.00	Computer-Controlled Machine Tool Operators, Metal and Plastic	76	2	720	\$40,490.00	\$7,510.00	6%	12	
51-2091.00	Fiberglass Laminators and Fabricators	75		440	\$33,960.00	\$980.00	5%	11	
51-4192.00	Lay-Out Workers, Metal and Plastic	75	2	180	\$43,870.00	\$10,890.00	-24%	3	
51-4041.00	Machinists	74	3	1,860	\$41,560.00	\$8,580.00	4%	35	★

Special Occupations:

Top Industries for Sawing Machine Setters, Operators, and Tenders, Wood

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Other wood product manufacturing	321900	26.55%	17,269	17,901	3.66%
Sawmills and wood preservation	321100	25.90%	16,845	14,856	-11.81%
Veneer, plywood, and engineered wood product manufacturing	321200	12.25%	7,969	9,546	19.78%
Self-employed workers, primary job	000601	7.11%	4,624	5,419	17.19%
Wood kitchen cabinet and countertop manufacturing	337110	5.97%	3,881	4,726	21.79%
Household and institutional furniture manufacturing	337120	5.22%	3,395	2,842	-16.30%



Office furniture (including fixtures) manufacturing	337200	3.32%	2,159	2,233	3.43%
Lumber and other construction materials merchant wholesalers	423300	2.03%	1,317	1,664	26.35%
Building material and supplies dealers	444100	1.42%	922	1,296	40.57%
Employment services	561300	1.09%	708	985	39.22%
Self-employed workers, secondary job	000602	0.90%	584	640	9.51%
Motor vehicle parts manufacturing	336300	0.25%	163	143	-12.42%
Motor vehicle body and trailer manufacturing	336200	0.24%	157	169	7.63%
Management of companies and enterprises	551100	0.12%	80	102	26.80%

Top Industries for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Self-employed workers, primary job	000601	14.95%	4,723	5,032	6.54%
Rubber product manufacturing	326200	10.31%	3,259	2,301	-29.39%
Clay product and refractory manufacturing	327100	9.28%	2,933	2,686	-8.41%
Glass and glass product manufacturing	327200	9.22%	2,913	2,542	-12.76%
Veneer, plywood, and engineered wood product manufacturing	321200	4.59%	1,449	1,578	8.89%
Sawmills and wood preservation	321100	4.43%	1,399	1,122	-19.82%
Pulp, paper, and paperboard mills	322100	3.81%	1,204	835	-30.64%
Other wood product manufacturing	321900	3.57%	1,127	1,062	-5.77%
Cement and concrete product manufacturing	327300	3.32%	1,049	1,138	8.55%
Aerospace product and parts manufacturing	336400	2.15%	681	693	1.84%
Foundries	331500	2.07%	654	474	-27.49%
Nonmetallic mineral mining and quarrying	212300	1.91%	604	648	7.32%
Nonferrous metal (except aluminum) production and processing	331400	1.78%	564	394	-30.05%
Iron and steel mills and ferroalloy manufacturing	331100	1.44%	456	307	-32.68%
Plastics product manufacturing	326100	1.31%	413	438	6.00%



TORQ Analysis of Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders to Cutting and Slicing Machine Setters, Operators, and Tenders

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	51-9051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Cutting and Slicing Machine Setters, Operators, and Tenders	51-9032.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:										81	
Ability TORQ			Skills TORQ			Knowledge TORQ					
Level			82	Level			71	Level			91
Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Visualization	44	23	53	Reading Comprehension	48	3	74	No Knowledge Upgrades Required!			
Finger Dexterity	51	14	65								
Wrist-Finger Speed	39	18	50								
Response Orientation	39	16	50								
Far Vision	39	13	50								
Arm-Hand Steadiness	48	9	65								
Rate Control	42	8	59								
Manual Dexterity	46	7	59								
Multilimb Coordination	48	7	59								
Category Flexibility	46	4	59								
Information Ordering	48	4	53								
<p>LEVEL and IMPT (IMPORTANCE) refer to the Target Cutting and Slicing Machine Setters, Operators, and Tenders. GAP refers to level difference between Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Cutting and Slicing Machine Setters, Operators, and Tenders.</p>											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders	Importance
Control Precision	50	50	72
Arm-Hand Steadiness	39	48	65



Finger Dexterity	37	51	65
Near Vision	53	48	65
Oral Comprehension	53	48	62
Problem Sensitivity	48	44	62
Deductive Reasoning	44	42	59
Category Flexibility	42	46	59
Manual Dexterity	39	46	59
Multilimb Coordination	41	48	59
Rate Control	34	42	59
Oral Expression	53	48	56
Selective Attention	51	46	56
Written Comprehension	46	44	53
Information Ordering	44	48	53
Perceptual Speed	50	46	53
Visualization	21	44	53
Reaction Time	50	48	53
Inductive Reasoning	44	42	50
Response Orientation	23	39	50
Wrist-Finger Speed	21	39	50
Static Strength	41	35	50
Trunk Strength	42	41	50
Extent Flexibility	50	41	50
Far Vision	26	39	50
Depth Perception	41	41	50
Speech Clarity	37	37	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders	Importance
Reading Comprehension	45	48	74

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders	Importance
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Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders	Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders
10+ years	0%	0%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	0%	0%	Post-Masters Cert	0%	0%
4-6 years	0%	1%	Master's Degree	0%	0%
2-4 years	19%	13%	Post-Bachelor Cert	0%	0%
1-2 years	19%	23%	Bachelors	0%	0%
6-12 months	34%	1%	AA or Equiv	0%	0%



3-6 months	17%	12%	Some College	0%	10%
1-3 months	0%	1%	Post-Secondary Certificate	3%	1%
0-1 month	3%	10%	High School Diploma or GED	96%	60%
None	4%	36%	No HSD or GED	0%	27%

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders
Most Common Educational/Training Requirement:	
Moderate-term on-the-job training	Moderate-term on-the-job training
Job Zone Comparison	
2 - Job Zone Two: Some Preparation Needed	2 - Job Zone Two: Some Preparation Needed
Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.	Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.
These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.	These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.
Employees in these occupations need anywhere from a few months to one year of working with experienced employees.	Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Tasks

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders
<p style="text-align: center; background-color: #f2f2f2; margin: 0;">Core Tasks</p> <p>Generalized Work Activities:</p> <ul style="list-style-type: none"> Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles). Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials. Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form. Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things. <p style="text-align: center; background-color: #f2f2f2; margin: 0;">Specific Tasks</p> <p>Occupation Specific Tasks:</p> <ul style="list-style-type: none"> Calculate amounts of materials to be loaded into furnaces, adjusting amounts as necessary for specific conditions. Clean, lubricate, and adjust equipment, using scrapers, solvents, air hoses, oil, and hand tools. 	<p style="text-align: center; background-color: #f2f2f2; margin: 0;">Core Tasks</p> <p>Generalized Work Activities:</p> <ul style="list-style-type: none"> Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles). Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things. Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials. Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources. Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. <p style="text-align: center; background-color: #f2f2f2; margin: 0;">Specific Tasks</p> <p>Occupation Specific Tasks:</p> <ul style="list-style-type: none"> Adjust machine controls to alter position, alignment, speed, or pressure. Change or replace saw blades, cables, cutter heads, and grinding wheels, using hand tools. Clean and lubricate cutting machines, conveyors, blades, saws, or knives, using

**Hand Tools.**

- Confer with supervisors or other equipment operators in order to report equipment malfunctions or to resolve production problems.
- Direct crane operators and crew members to load vessels with materials to be processed.
- Examine or test samples of processed substances, or collect samples for laboratory testing, in order to ensure conformance to specifications.
- Feed fuel, such as coal and coke, into fireboxes or onto conveyors, and remove ashes from furnaces, using shovels and buckets.
- Load equipment receptacles or conveyors with material to be processed, by hand or using hoists.
- Melt or refine metal before casting, calculating required temperatures; and observe metal color and adjust controls as necessary in order to maintain required temperatures.
- Monitor equipment operation, gauges, and panel lights in order to detect deviations from standards.
- Press and adjust controls in order to activate, set, and regulate equipment according to specifications.
- Read and interpret work orders and instructions in order to determine work assignments, process specifications, and production schedules.
- Record gauge readings, test results, and shift production in log books.
- Remove products from equipment, manually or using hoists, and prepare them for storage, shipment, or additional processing.
- Replace worn or defective equipment parts, using hand tools.
- Sprinkle chemicals on the surface of molten metal in order to bring impurities to surface and remove impurities, using strainers.
- Stop equipment and clear blockages or jams, using fingers, wire, or hand tools.
- Transport materials and products to and from work areas, manually or using carts, handtrucks, or hoists.
- Weigh or measure specified amounts of ingredients or materials for processing, using devices such as scales and calipers.

Detailed Tasks**Detailed Work Activities:**

- adjust production equipment/machinery setup
- apply cleaning solvents
- clean equipment or machinery
- collect samples for testing
- confer with engineering, technical or manufacturing personnel
- examine products or work to verify conformance to specifications

steam hoses, scrapers, brushes, or oil cans.

- Cut stock manually to prepare for machine cutting, using tools such as knives, cleavers, handsaws, or hammers and chisels.
- Direct workers on cutting teams.
- Examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices such as rulers, micrometers, or scales.
- Feed stock into cutting machines, onto conveyors, or under cutting blades, by threading, guiding, pushing, or turning handwheels.
- Maintain production records, such as quantities, types, and dimensions of materials produced.
- Mark cutting lines or identifying information on stock, using marking pencils, rulers, or scribes.
- Monitor operation of cutting or slicing machines to detect malfunctions or to determine whether supplies need replenishment.
- Move stock or scrap to and from machines manually, or by using carts, handtrucks, or lift trucks.
- Operate cranes, or signal crane operators to position or remove stone from cars or saw beds.
- Position stock along cutting lines, or against stops on beds of scoring or cutting machines.
- Position width gauge blocks between blades, and level blades and insert wedges into frames to secure blades to frames.
- Press buttons, pull levers, or depress pedals to start and operate cutting and slicing machines.
- Remove completed materials or products from cutting or slicing machines, and stack or store them for additional processing.
- Remove defective or substandard materials from machines, and readjust machine components so that products meet standards.
- Review work orders, blueprints, specifications, or job samples to determine components, settings, and adjustments for cutting and slicing machines.
- Select and install machine components such as cutting blades, rollers, and templates, according to specifications, using hand tools.
- Set up, operate, or tend machines that cut or slice materials, such as glass, stone, cork, rubber, tobacco, food, paper, or insulating material.
- Sharpen cutting blades, knives, or saws, using files, bench grinders, or honing stones.
- Stack and sort cut material for packaging, further processing, or shipping, according to types and sizes of material.
- Start machines to verify setups, and make any necessary adjustments.
- Start pumps to circulate water and abrasives onto blades or cables during cutting.



- load or unload material or workpiece into machinery
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- maintain production or work records
- measure, weigh, or count products or materials
- monitor production machinery/equipment operation to detect problems
- move or fit heavy objects
- operate chemical processing equipment
- operate glass or stone working equipment/machinery
- operate hoist, winch, or hydraulic boom
- operate laundering or dry cleaning equipment
- operate metal or plastic fabricating equipment/machinery
- operate ore refining/foundry equipment/machinery
- operate pulp or paper making equipment
- operate textile production equipment/machinery
- operate woodworking equipment/machinery
- read work order, instructions, formulas, or processing charts
- test manufactured products or materials
- understand technical operating, service or repair manuals
- use hand or power tools
- use precision measuring tools or equipment

- tighten pulleys or add abrasives to maintain cutting speeds.
- Turn cranks or press buttons to activate winches that move cars under sawing cables or saw frames.
- Type instructions on computer keyboards, push buttons to activate computer programs, or manually set cutting guides, clamps, and knives.
- Wash stones, using water hoses.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- attach or mark identification onto products or containers
- clean equipment or machinery
- cut or shape stone, tile, brick, or related material
- direct and coordinate activities of workers or staff
- examine products or work to verify conformance to specifications
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- load, unload, or stack containers, materials, or products
- maintain consistent production quality
- maintain or repair industrial or related equipment/machinery
- maintain production or work records
- measure, weigh, or count products or materials
- monitor production machinery/equipment operation to detect problems
- operate forklift
- operate glass or stone working equipment/machinery
- operate hoist, winch, or hydraulic boom
- operate metal or plastic fabricating equipment/machinery
- operate woodworking equipment/machinery
- perform safety inspections in manufacturing or industrial setting
- read blueprints
- read specifications
- read technical drawings
- read work order, instructions, formulas, or processing charts
- set up production equipment or machinery
- signal directions or warnings to coworkers
- sort manufacturing materials or products
- understand technical operating, service or repair manuals
- use hand or power tools



- use hand or power woodworking tools
- use precision measuring tools or equipment
- work as a team member

Labor Market Comparison

Maine Department of Labor.

Description	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	Cutting and Slicing Machine Setters, Operators, and Tenders	Difference
Median Wage	\$ 32,980	\$ 31,350	\$(1,630)
10th Percentile Wage	\$ 22,430	\$ 23,000	\$ 570
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 37,570	\$ 43,790	\$ 6,220
90th Percentile Wage	\$ 51,800	\$ 49,280	\$(2,520)
Mean Wage	\$ 34,280	\$ 34,670	\$ 390
Total Employment - 2607	300	710	410
Employment Base - 2006	314	767	453
Projected Employment - 2616	259	593	334
Projected Job Growth - 2006-2616	-17.5 %	-22.7 %	-5.2 %
Projected Annual Openings - 2006-2616	9	12	3
Special			

Special Occupations:

National Job Posting Trends

Trend for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders and Cutting and Slicing Machine Setters, Operators, and Tenders



Programs

Related Programs

Cabinet Maker and Millworker

Cabinetmaking and Millwork/Millwright. A program that prepares individuals to apply technical knowledge and skills to set up, operate and repair industrial woodworking machinery, and to use such machinery to design and fabricate wooden components and complete articles.

No information on schools for the program

Maine Statewide Promotion Opportunities for Furnace, Kiln, Oven, Drier, and Kettle Operators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
51-9051.00	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	100	2	300	\$32,980.00	\$0.00	-18%	9	
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	83	2	910	\$38,230.00	\$5,250.00	-26%	23	
51-4034.00	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	80	3	110	\$34,350.00	\$1,370.00	-9%	2	
51-9023.00	Mixing and Blending Machine Setters, Operators, and Tenders	80	1	420	\$36,040.00	\$3,060.00	-9%	7	



51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	79	2	120	\$36,960.00	\$3,980.00	2%	3	
51-4032.00	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	78	2	100	\$33,030.00	\$50.00	-22%	2	
51-9121.00	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	78	2	850	\$38,860.00	\$5,880.00	-26%	19	
51-4121.06	Welders, Cutters, and Welder Fitters	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★
43-5053.00	Postal Service Mail Sorters, Processors, and Processing Machine Operators	77	2	970	\$41,950.00	\$8,970.00	-12%	10	
51-4121.07	Solderers and Brazers	77	2	1,610	\$38,030.00	\$5,050.00	7%	49	★
47-5021.00	Earth Drillers, Except Oil and Gas	76	3	140	\$37,470.00	\$4,490.00	2%	4	
51-4011.00	Computer-Controlled Machine Tool Operators, Metal and Plastic	76	2	720	\$40,490.00	\$7,510.00	6%	12	
51-2091.00	Fiberglass Laminators and Fabricators	75		440	\$33,960.00	\$980.00	5%	11	
51-4192.00	Lay-Out Workers, Metal and Plastic	75	2	180	\$43,870.00	\$10,890.00	-24%	3	
51-4041.00	Machinists	74	3	1,860	\$41,560.00	\$8,580.00	4%	35	★

Special Occupations:

Top Industries for Cutting and Slicing Machine Setters, Operators, and Tenders

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Converted paper product manufacturing	322200	15.71%	12,381	10,390	-16.08%
Printing and related support activities	323100	12.36%	9,738	7,716	-20.77%
Plastics product manufacturing	326100	8.03%	6,327	6,707	6.00%
Pulp, paper, and paperboard mills	322100	5.55%	4,376	3,036	-30.64%
Animal slaughtering and processing	311600	5.30%	4,180	4,770	14.13%
Rubber product manufacturing	326200	4.91%	3,867	2,731	-29.39%
Glass and glass product manufacturing	327200	4.39%	3,461	3,020	-12.76%



Fruit and vegetable preserving and specialty food manufacturing	311400	2.17%	1,712	1,552	-9.33%
Other food manufacturing	311900	1.83%	1,441	1,511	4.85%
Bakeries and tortilla manufacturing	311800	1.60%	1,262	1,289	2.15%
Self-employed workers, primary job	000601	1.56%	1,230	1,311	6.54%
Dairy product manufacturing	311500	1.52%	1,197	1,185	-1.07%
Other chemical product and preparation manufacturing	325900	1.41%	1,108	872	-21.33%
Fabric mills	313200	1.06%	833	588	-29.38%
Veneer, plywood, and engineered wood product manufacturing	321200	0.81%	637	694	8.89%

Top Industries for Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Self-employed workers, primary job	000601	14.95%	4,723	5,032	6.54%
Rubber product manufacturing	326200	10.31%	3,259	2,301	-29.39%
Clay product and refractory manufacturing	327100	9.28%	2,933	2,686	-8.41%
Glass and glass product manufacturing	327200	9.22%	2,913	2,542	-12.76%
Veneer, plywood, and engineered wood product manufacturing	321200	4.59%	1,449	1,578	8.89%
Sawmills and wood preservation	321100	4.43%	1,399	1,122	-19.82%
Pulp, paper, and paperboard mills	322100	3.81%	1,204	835	-30.64%
Other wood product manufacturing	321900	3.57%	1,127	1,062	-5.77%
Cement and concrete product manufacturing	327300	3.32%	1,049	1,138	8.55%
Aerospace product and parts manufacturing	336400	2.15%	681	693	1.84%
Foundries	331500	2.07%	654	474	-27.49%
Nonmetallic mineral mining and quarrying	212300	1.91%	604	648	7.32%
Nonferrous metal (except aluminum) production and processing	331400	1.78%	564	394	-30.05%
Iron and steel mills and ferroalloy manufacturing	331100	1.44%	456	307	-32.68%
Plastics product manufacturing	326100	1.31%	413	438	6.00%

Industry & Occupational Data Sources

TORQ Results: The TORQ Scores is based upon an proprietary algorithm applied against Knowledge, Skills and Ability levels and importance derived from O*NET 12.

ASK Analysis, Experience & Education Levels and Tasks: O*Net 12

Labor Market Comparisons Occupational Projections data from Maine Department of Labor

National Posting Trends Indeed.com

Labor Pool & Promotions Opportunities: Occupational Projections data from Maine Department of Labor

Top Industries: Occupational Employment Statistics program (U.S. Bureau of Labor Statistics)