

Model Curriculum

Casting Technician L3

SECTOR: AUTOMOTIVE
SUB-SECTOR: MANUFACTURING
OCCUPATION: FORMING - CASTING
REF ID: ASC/Q3202, VERSION 1.0
NSQF LEVEL: 3

 Skill India शिक्षण करो - कुशल करो	 AUTOMOTIVE SKILLS DEVELOPMENT COUNCIL	 N-S-D-C National Skill Development Corporation Transforming the skill landscape
Certificate		
CURRICULUM COMPLIANCE TO QUALIFICATION PACK - NATIONAL OCCUPATIONAL STANDARDS		
is hereby issued by the		
AUTOMOTIVE SKILLS DEVELOPMENT COUNCIL		
for		
MODEL CURRICULUM		
Complying to National Occupational Standards of		
Job Role/Qualification Pack	<u>'Casting Technician Level 3'</u>	QP No: <u>'ASC/Q3202, NSQF Level 3'</u>
Date of issuance: August 12th, 2018		
Valid up to: July 12th, 2020*		
*Valid up to the next review date of the Qualification Pack		
		 Authorised Signatory (Automotive Skills Development Council)

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Casting Technician L3

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "**Casting Technician L3**", in the "**Automotive**" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Casting Technician L3		
Qualification Pack Code	ASC/Q3202		
Version No.	1.0	Version Update Date	11 th February 2019
Pre-requisites to Training	Class X		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Identify the job requirement, processes need to be executed, equipment will be used for the project and output required considering the standards specified. • Support the operator in various casting operations as per the final output specifications and the standards specified by the organization. • Perform fettling and post casting operations such as remove the projections or extra metal from the surface of casting in line with the required specifications and industry standards. • Conduct quality checks and inspection of the finished products for any damages, deformities and further repair the parts produced so that the damaged/ defective pieces can be corrected and right quality components. • Conduct regular cleaning and maintenance of equipment. • Maintain a safe and healthy work place by adhering to the safety guidelines in the working area of the organization and following the practices which are not impacting the environment in a negative manner. • Maintain 5S in the work premises by sorting, streamlining & organizing, storage and documentation, cleaning, standardization and sustenance across the plant and office premises of the organization. 		

This course encompasses 7 out of 7 National Occupational Standards (NOS) of “**Casting Technician L3**” Qualification Pack issued by “Automotive Skills Development Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Introduction</p> <p>Theory Duration (hh:mm) 05:00</p> <p>Practical Duration (hh:mm) 00.00</p> <p>Corresponding NOS Code Bridge Module</p>	<ul style="list-style-type: none"> List general discipline rules in the classroom Discuss about automotive industry List various auto manufacturers Discuss terms associated with the sector List job opportunities as casting technician Outline career growth path for a casting technician 	
2.	<p>Interpret engineering drawing and processes</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 25:00</p> <p>Corresponding NOS Code ASC/ N 3205</p>	<ul style="list-style-type: none"> Follow relevant standards and procedures of the company List different types of products manufactured by the company Follow quality norms prescribed by the organization for casting jobs Interpret information from the work order (work output). Interpret information from sketches and engineering drawings. List do's and don'ts of the manufacturing process as defined in SOPs/ work instructions Carryout escalation of queries to the competent person in case of any issues. Identify and operate different types of tools and machinery required for casting. Demonstrate operation of measuring instruments like vernier calliper, micrometer and other measurement systems. List safety precautions to be taken for all types of activities. 	<p>Sketches and drawings</p> <p>Raw Materials: Sand, die</p> <p>Machinery: Moulding machine, Casting machine, Die Casting machine, Casting die, Trim press , Shot blasting machine, mixers, hoppers, feeders etc.</p> <p>Auxiliaries: spatulas, chippers etc.</p> <p>Fuel: Charcoal</p> <p>Measuring Tools: Steel tape, Steel rule, Vernier calliper, Micrometer, Compass</p> <p>Cutting Tools: Hacksaw frame adjustable, chisel, scissor, Sand paper</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			<p>Driving Tools: Chipping hammer, wooden mallet,</p> <p>Safety Materials: Fire extinguisher, Leather safety gloves, leather aprons, safety glasses, Ear Plug, Safety Shoe and First aid kit</p> <p>Cleaning material and other tools: Tip cleaner, Wire brush (M.S.), Cleaning agents, Cleaning cloth, Waste container, Dust pan & brush set, Liquid soap, Hand towel</p>
3	<p>Support the operator in conducting casting process</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 30:00</p> <p>Corresponding NOS Code ASC/ N 3206</p>	<ul style="list-style-type: none"> Describe various types of casting processes and associated equipment. Identify different parameters pertinent to casting process. Demonstrate process of pouring the metal into casting. Describe furnace operation, melting process, charging method and safety process of handling hot liquid iron, furnace lining process. Perform casting process. Perform setup of casting apparatus required for casting process. Describe mechanical/ heat laws and working of casting machines etc. Maintain metal temperature as per given specifications and maintain down sprue always full during pouring 	<p>Raw Materials: Sand, die</p> <p>Machinery: Moulding machine, Casting machine, Die Casting machine, Casting die, Trim press, Shot blasting machine, mixers, hoppers, feeders etc.</p> <p>Auxiliaries: spatulas, chippers etc.</p> <p>Fuel: Charcoal</p> <p>Measuring Tools: Steel tape, Steel rule, Vernier calliper, Micrometer, Compass</p> <p>Cutting Tools: Hacksaw frame adjustable, chisel, scissor, Sand paper</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Record the pouring observations like parting leak, gas evolution, interrupted pouring or any abnormality. Perform monitoring of casting process by observing and analyzing the readings. Perform other processes such as chipping, fettling etc. Identify casting defects and how they can be prevented. Follow safety precautions to be taken for all types of activities. 	<p>Driving Tools: Chipping hammer, wooden mallet,</p> <p>Safety Materials: Fire extinguisher, Leather safety gloves, leather aprons, safety glasses, Ear Plug, Safety Shoe and First aid kit</p> <p>Cleaning material and other tools: Tip cleaner, Wire brush (M.S.), Cleaning agents, Cleaning cloth, Waste container, Dust pan & brush set, Liquid soap, Hand towel</p>
4	<p>Perform fettling and post casting operation</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 30:00</p> <p>Corresponding NOS Code ASC/N 3207</p>	<ul style="list-style-type: none"> Describe control charts. Examine cast in terms of the geometrical dimensions as per the control charts. Identify sprues, projections, runners, risers etc. on the surface. Describe different mechanisms to perform fettling and trimming of the cast. Perform trimming process on surface to provide accurate shape to the cast. Identify and operate tools and equipment required for trimming and fettling. Demonstrate gas cutting and flame cutting methods for semi manual fettling. Perform alignment with the prescribed standards for future modification of trimming and fettling process. Perform storing of excess material (or runners/ risers etc.) for reusing it. Examine the measurements of final metal as prescribed in the work order. 	<p>Raw Materials: Sand, die</p> <p>Machinery: Moulding machine, Casting machine, Die Casting machine, Casting die, Trim press, Shot blasting machine, mixers, hoppers, feeders etc.</p> <p>Auxiliaries: spatulas, chippers etc.</p> <p>Fuel: Charcoal</p> <p>Measuring Tools: Steel tape, Steel rule, Vernier calliper, Micrometer, Compass</p> <p>Cutting Tools: Hacksaw frame adjustable, chisel, scissor, Sand paper</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Follow safety precautions to be taken for all types of activities. 	<p>Driving Tools: Chipping hammer, wooden mallet,</p> <p>Safety Materials: Fire extinguisher, Leather safety gloves, leather aprons, safety glasses, Ear Plug, Safety Shoe and First aid kit</p> <p>Lifting devices: Hoists, Cranes, Conveyors, Bins, Part trolleys, Pallet trucks</p> <p>Cleaning tools and miscellaneous: Cleaning cloth, Waste container, Dust pan & brush set</p>
5	<p>Conduct quality checks and inspection of the finished products</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 25:00</p> <p>Corresponding NOS Code ASC/N 0007</p>	<ul style="list-style-type: none"> Demonstrate operation of devices micrometre, vernier calliper, gauges, scale, weighing scale and any other inspection equipment, and compare with the parameters. Identify defects in workpieces. Perform comparison of texture, colour, surface properties, hardness and strength with the given product specifications. Follow basic quality inspection process. Identify and operate tools required for inspection of finished product. Conduct rectification of minor defects by fettling, chipping, cutting, sawing, filling, shearing, hammering etc. Demonstrate procedure of separation of damaged pieces. Maintain records of each category of work outputs 	<p>Steel tape, steel ruler, vernier, calliper, micrometer, surface plate, height gauge, dial gauge, boroscope, hand held thermometer, pressure indicator, strain gauge, thermocouple and radius gauge set</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
6	<p>Conduct regular cleaning and maintenance of equipment</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 20:00</p> <p>Corresponding NOS Code ASC/N0008</p>	<ul style="list-style-type: none"> Perform basic level maintenance and cleaning of all equipment and associated auxiliaries. Identify various solvents, chemicals, lubricants etc. required for maintenance processes Demonstrate procedure for arranging the equipment and spare parts in the prescribed manner for maintenance activity. Perform labelling of all equipment and spare parts properly. Perform cleaning of equipment and workarea regularly. Perform checking of all bearing, rollers, shafts etc. Perform lubrication of all moving parts of equipment and machinery. Make periodic log sheets in which equipment maintenance dates maintenance schedules and maintenance activity conducted 	<ul style="list-style-type: none"> Lubricant: Oil, grease, Cleaning agents and chemicals Measuring instruments: Vernier callipers, micrometer Cleaning cloth, Waste container, Dust pan & brush set, Liquid soap, Hand towel,
7	<p>Maintain a safe, clean and healthy working environment</p> <p>Theory Duration (hh:mm) 20:00</p> <p>Practical Duration (hh:mm) 25:00</p> <p>Corresponding NOS Code ASC/N0006</p>	<ul style="list-style-type: none"> List workplace hazards and risks Use personal protective equipment like safety gloves, safety glasses, safety shoes and safety helmet at workplace. Identify activities which can cause potential injury Report concerned authorities about the potential risks Report concerned authorities about machine breakdowns, damages Assist the safety team and the supervisor in creating the risk mitigation plan Follow the instructions given in the equipment manual Follow the safety, health and environment related practices Follow safety signs placed on the shop floor 	<p>Cleaning agents, Cleaning cloth, Waste container, Dust pan & brush set, Liquid soap, Hand towel, Fire extinguisher, Portable welding curtains, Leather safety gloves, leather aprons, safety glasses with side shields, Ear Plug, Welding respirator, Screen welding helmet type with filter glasses, Safety Shoe and First aid kit</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> • Operate the machine using the recommended Personal Protective Equipment (PPE). • Demonstrate use of fire-fighting equipment • List and explain the contents of the first aid kit • Maintain a clean and safe working environment • Attend all safety and fire drills to be self-aware of safety hazards and preventive techniques • Maintain high standards of personal hygiene at the work place • Follow organizational procedure of waste disposal • Report appropriately to medical officer/ HR in case of self or an employee's illness 	
8	<p>Maintaining 5S at the work premises</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 20:00</p> <p>Corresponding NOS Code ASC/N0021</p>	<ul style="list-style-type: none"> • Identify that the work area, tools, equipment and materials are clean • Demonstrate storage of cleaning material and equipment in the correct location and in good condition • Follow good grooming practices • Identify daily cleaning standards and schedules to create a clean working environment • Demonstrate procedure of materials, tools and equipment's and spare parts sorting. • Demonstrate proper labelling procedures • Demonstrate proper storage procedures • Perform segregation of waste into hazardous and non-hazardous waste and dispose the waste as per SOP • Follow 5S guidelines at workplace 	Fire extinguisher, First aid, disposal of hazardous items and parts to provide an overview
	<p>Total Duration</p> <p>Theory Duration (hh:mm) 125:00</p>	<p>Unique Equipment Required</p> <ul style="list-style-type: none"> • Drawing and sketches • Raw Materials: Sand, die • Machinery: Moulding Machine, Casting Machine, Die Casting Machine, Casting Die, Trim Press, Shot blasting machine, mixers, hoppers, feeders etc. 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 175:00	<ul style="list-style-type: none"> • Auxiliaries: spatulas, chippers etc. • Fuel: Charcoal • Measuring Tools: Steel tape, steel rule, vernier calliper, micrometer, Compass, surface plate, height gauge, dial gauge, boroscope, hand held thermometer, pressure indicator, strain gauge, thermocouple and radius gauge set • Cutting Tools: Hacksaw frame adjustable, chisel, scissor, Sand paper • Driving Tools: Chipping hammer, wooden mallet • Lifting devices: Hoists, Cranes, Conveyors, Bins, Part trolleys, Pallet trucks • Lubricant: Oil, grease, Cleaning agents and chemicals • Cleaning tools and miscellaneous: Cleaning cloth, Waste container, Dust pan & brush set • Safety equipment: Cleaning agents, Cleaning cloth, Waste container, Dust pan & brush set, Liquid soap, Hand towel, Fire extinguisher, Portable welding curtains, Leather safety gloves, leather aprons, safety glasses with side shields, Ear Plug, Welding respirator, Screen welding helmet type with filter glasses, Safety Shoe and First aid kit 	

Grand Total Course Duration: **300Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by **Automotive Skills Development Council**)

Trainer Prerequisites for Job role: “Casting Technician Level 3” mapped to Qualification Pack: “ASC/Q3202, Version 1.0”

S. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ <u>ASC/Q3202, Version 1.0</u> ”.
2	Personal Attributes	<ul style="list-style-type: none"> • Aptitude for conducting training and pre/post work to ensure competent, employable candidates at the end of the training. • Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well organized and focused. • Eager to learn and keep oneself abreast of the latest developments and newer technologies used in the various systems of the vehicle and its aggregates is highly desirable. • Should be able to demonstrate the usage of workshop equipment, instruments, special instruments and tools. • Should have sharp diagnostic abilities for identifying reasons of problems in vehicles and troubleshoot. • Should be hands-on with casting practices to provide actual training.
3	Minimum Educational Qualifications	Diploma in mechanical engineering
4a	Domain Certification	Certified for Job Role: “ <u>Casting Technician L3</u> ” mapped to QP: <u>ASC/Q3202, v1.0</u> . Minimum qualifying score 80%, as per ASDC guidelines.
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “ <u>Trainer</u> ”, mapped to the Qualification Pack: “ <u>MEP/ Q0102</u> ”. Minimum accepted score as per ASDC guidelines is 80%.
5	Experience	3 years for diploma holder

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Casting Technician L3
Qualification Pack	ASC/Q3202, v1.0
Sector Skill Council	Automotive

Sr. No.	Guidelines for Assessment
1	Assessment to be conducted by ASDC as per competency output defined in the NOS/QP and the assessment criteria provided in the NOS/QP
2	Assessment to be carried out by a third party Assessment Body duly affiliated to the SSC.
3	ASDC assessments will be comprehensive and cover all aspects of acquired knowledge, practical skills and also basic ability to communicate. Accordingly, evaluation process would include: <ol style="list-style-type: none"> Theory/Knowledge test Practical demonstration test Face to Face Viva-Voice
4	Theory/Knowledge assessment will be carried out on line through a link provided for each assessment that generates a random paper from a bank of questions available at the back end. <ul style="list-style-type: none"> Exception to an online test in favour of Paper Test would be subject to non availability of requisite broad band and/or hardware. On line test would be conducted in the presence of an ASDC assessor till web enabled proctoring is deployed.
5	ASDC assessor would be conducting Practical and Viva as per the criteria provided in the NOS/QP.
6	Cut off criteria for certification (Marks obtained in: 70%)

Assessable Outcome	Assessment Criteria	Total Mark	Out of	Marks allocation	
				Theory	Practical
1. ASC/N3205 Understand the job requirement activities for	PC1. Understand the work order (work output) required from the process and discuss the same with the operator	100	14	4	10
	PC2. Refer all engineering drawing and sketches related to the work output to understand the measurement		14	4	10

quality production	and the work output to understand the measurement and shape required work output				
	PC3. Clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/Work Instructions of defined by supervisors		19	6	13
	PC4. Refer the queries to the operator / Caster if they cannot be resolved by the Assistant Caster on own		19	6	13
	PC5. Obtain help or advice from specialist if the problem is outside his/her area of competence or experience		17	5	12
	PC6. Confirm self-understanding to the Operator once the query is resolved so that all doubts & queries can be resolved before the actual process execution		17	5	12
	Total		100	30	70
2. ASC/N3206 Support the casting process	PC1. Ensure refractory ladles are preheated and in red hot condition, its pouring spout or lip is repaired and free from slag	100	5	1	4
	PC2. Ensure required Ferro alloy or inoculants are added during tapping or transfer		5	1	4
	PC3. Confirm metal temperature as per given specifications		7	2	5
	PC4. Confirm the pouring is done within stipulated time span		9	3	6
	PC5. Maintain down spur is always full during pouring		9	3	6
	PC6. Ensure metal steam inoculation per each mould		9	3	6
	PC7. Record the pouring observations like parting leak gas, evolution, interrupted pouring or any abnormality		9	3	6
	PC8. Allow the poured to cool as per given instructions before knock out		9	3	6
	PC9. Obtain instructions from operators to adjust the temperature and		9	3	6

	others parameters as per the casting requirement				
	PC10. Obtain instructions from operator to turn valves to circulate water through cores, or spray water on filled molds to cool and solidify metal (in case of manual solidification)		8	2	6
	PC11. Help the operator in monitoring the casting process (parameters like temperature etc.) by observing and analyzing the reading on various panels/meters to prevent machine breakdown and deviations of the cast from desired specification		7	2	5
	PC12. Provide observations on final metal casting in terms of the dimensions as prescribed in the work order engineering drawing		7	2	5
	PC13. Perform future processing of cast in terms of chipping, fettling etc.		7	2	5
	Total		100	30	70
3. ASC/N3207 Perform fettling & post casting activities	PC1. Analyze the cast in terms of the geometrical dimensions as per the control charts defined and identify the sprues, projections, runners, risers etc on the surface	100	7	2	5
	PC2. Trim the cast to remove fins, flashes and excess metal from the surface in order to provide accurate shape to the cast		8	2	6
	PC3. Finish and fine trim the cast to remove the excess metal from the surface with the aid of: a. Swing frame or pedestal grinders, chipping tools, hammers, hand saws, pneumatic or electrical tools etc. for manual fettling b. Gas cutting and Flame cutting methods for semi manual fettling		13	4	9
	PC4. Modify the trimming and fettling process (if required) and ensure alignment with the prescribed standards		13	4	9

	PC5. Store the excess material (or runners/risers etc.) in order to be reused		13	4	9
	PC6. Re-check trimming and fettling process (if required) and ensure alignment with the prescribed standards		13	4	9
	PC7. Re-check and store the excess material (or runners/risers etc.) in order to be reused		13	4	9
	PC8. Measure the final metal casting and compare the dimensions as prescribed in the work order engineering drawing		13	4	9
	PC9. In case the parts are not as per the given measurements, undertake further shaping of the metal casting		7	2	5
	Total		100	30	70
4. ASC/N0007 Inspection of the finished goods	PC1. Measure the specifications of the finished product using devices like micrometer, Vernier calliper, gauges, rulers, weighing scales and any other inspection equipment and compare with the parameters given in the work order	100	9	3	6
	PC2. Compare texture, color, surface properties, hardness and strength with the given product specifications		9	3	6
	PC3. Note down the observations of the basic inspection process and identify pieces which are OK and also not meeting the specified standards		15	4	11
	PC4. Separate the defective pieces into two categories pieces which can be repaired/ modified and pieces which are beyond repair		15	4	11
	PC5. Discard the pieces which are beyond repair and repair the ones which need minor modifications/ rework		17	5	12
	PC6. Maintain records of each category of work outputs		17	5	12
	PC7. Rectify minor defects like excess slag, shape deformation, sharp edges, rough surfaces, grooves, holes etc. by Fettling, chipping, cutting, sawing, filling, shearing, hammering etc.		9	3	6

	PC8. Escalate all issues related to change in color, surface properties, hardness etc. so that the manufacturing equipment can be reset to achieve the specified output		9	3	6
	Total		100	30	70
5. ASC/N0008 Carry out regular cleaning & maintenance of the equipment	PC1. Arrange all equipment in a proper order as indicate in the equipment manual	100	7	2	5
	PC2. Store equipment auxiliaries and spare parts in proper designated areas		7	2	5
	PC3. Clearly tag process related equipment parts/ spare parts as per part number or serial number so that sorting of equipment becomes easy		7	2	5
	PC4. Cover equipment so that there is limited dust collection and moisture contact		9	3	6
	PC5. Regularly clean the equipment and process auxiliaries to remove any dust, moisture, waste material which would have got collected on the equipment		9	3	6
	PC6. Regularly open the equipment and clean the internal parts of the equipment		10	3	7
	PC7. Regularly clean the working area under the process and create a healthy, clean and safe working environment		10	3	7
	PC8. Check the working of all bearing, rollers, shafts etc. and oil all moving parts of the equipment on aperiodic basis		10	3	7
	PC9. Check the working of non- moving parts and periodically conduct preventive maintenance to prevent machine failure		9	3	6
	PC10. Periodically check the equipment calibration and report any errors to the maintenance teams for rectification		8	2	6
	PC11. Prepare periodic log sheets of equipment maintenance dates, maintenance schedules and maintenance activity conducted on the equipment		7	2	5

	PC12. Maintain safety precautions to be taken during cleaning and maintenance activities		7	2	5
	Total		100	30	70
6. ASC/N0006 Maintain a safe and healthy working environment	PC1. Identify and prevent activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise.	100	7	2	5
	PC2. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc.		7	2	5
	PC3. Inform the concerned authorities about damages which can potentially harm man/ machine during operations		7	2	5
	PC4. Create awareness amongst other by sharing information on the identified risks.		11	3	8
	PC5. Follow the instructions given on the equipment manual describing the operating process of the equipment.		12	4	8
	PC6. Follow the Safety, Health and Environment related practices developed by the organization.		12	4	8
	PC7. Operate the machine using the recommended Personal Protective Equipment (PPE)		12	4	8
	PC8. Maintain a clean and safe working environment near the workplace and ensure there is no spillage of chemicals, production waste, oil, solvents etc.		11	3	8
	PC9. Maintain high standards of personal hygiene at the work place.		7	2	5
	PC10. Ensure that the waste disposal takes place in the designated area as per organization SOP.		7	2	5
	PC11. Inform the medical officer/ HR in case of self or an employee's illness of contagious nature so that		7	2	5

	preventive actions can be planned for others.				
	Total		100	30	70
7. ASC/N0021 Maintain 5S at the work premises	PC1. Follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and un-necessary items are not cluttering the workbenches or work surfaces.	100	3	1	2
	PC2. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions.		3	1	2
	PC3. Follow the technique of waste disposal and waste storage in the proper bins as per SOP.		3	1	2
	PC4. Segregate the items which are labeled as red tag items for the process area and keep them in the correct places.		4	1	3
	PC5. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions.		4	1	3
	PC6. Ensure that areas of material storage areas are not overflowing.		4	1	3
	PC7. Properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required.		4	1	3
	PC8. Return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area.		4	1	3
	PC9. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards.		4	1	3
	PC10. Ensure proper labeling mechanism of instruments/		4	1	3

	boxes/ containers and maintaining reference files/ documents with the codes and the lists.			
	PC11. Check that the items in the respective areas have been identified as broken or damaged	4	1	3
	PC12. Follow the given instructions and check for labeling of fluids, oils. Lubricants, solvents, chemicals etc. And proper storage of the same to avoid spillage, leakage, fire etc.	4	1	3
	PC13. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions.	4	1	3
	PC14. Check whether safety glasses are clean and in good condition.	4	1	3
	PC15. Keep all outside surfaces of recycling containers are clean	4	1	3
	PC16. Ensure that the area has floors swept, machinery clean and generally clean. In case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards	4	1	3
	PC17. Check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up.	4	1	3
	PC18. Ensure workbenches and work surfaces are clean and in good condition.	4	1	3
	PC19. Follow the cleaning schedule for the lighting system to ensure proper illumination.	4	1	3
	PC20. Store the cleaning material and equipment in the correct location and in good condition.	4	1	3
	PC21. Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene.	4	1	3

	PC22. Follow the daily cleaning standards and schedules to create a clean working environment.		3	1	2
	PC23. Attend all training programs for employees on 5S.		3	1	2
	PC24. Support the team during the audit of 5S.		3	1	2
	PC25. Participate actively in employee work groups on 5S and encourage team members for active participation.		3	1	2
	PC26. Follow the guidelines for What to do and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions.		3	1	2
	Total		100	30	70
	Grand Total	700	700	210	490
	Percentage Weightage (%)			30	70