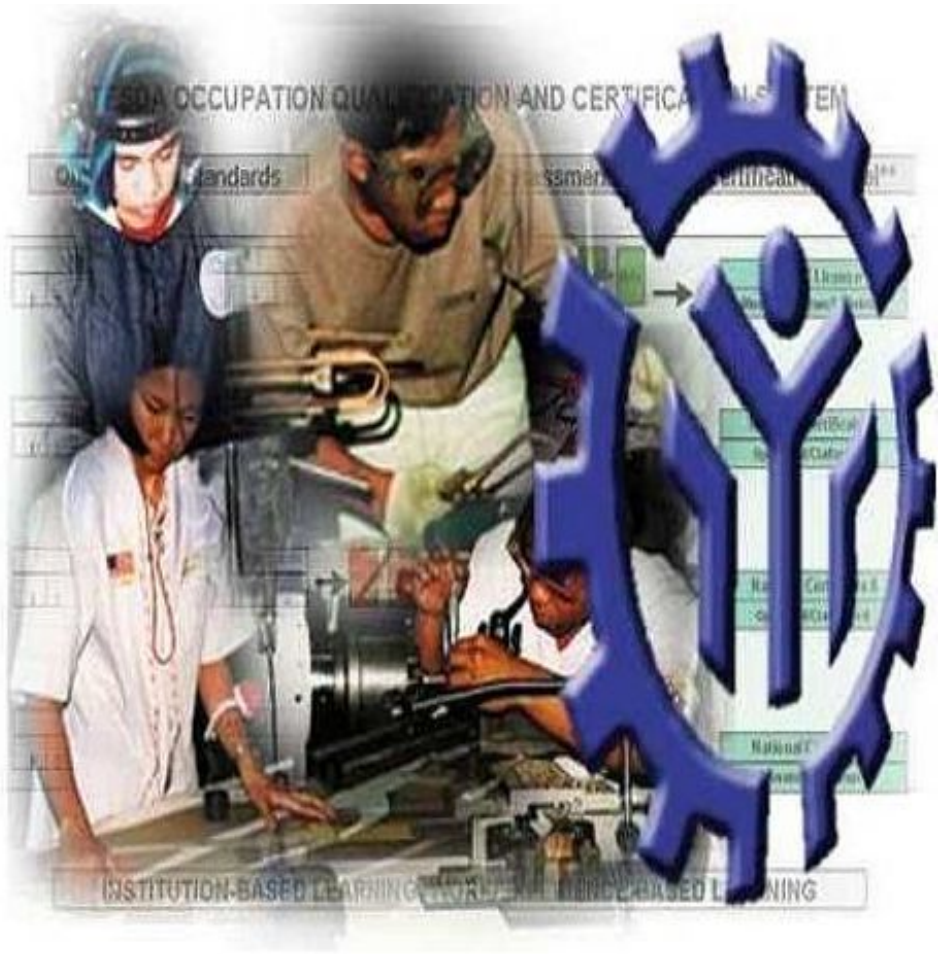
TRAINING REGULATIONS



PYROTECHNICS NC II

PYROTECHNICS MANUFACTURING SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Superhighway, Taguig City, Metro Manila

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PYROTECHNICS NC II

TRAINING REGULATIONS FOR

PYROTECHNICS NC II

SECTION 1 PYROTECHNICS NC II QUALIFICATION

The PYROTECHNICS NC II Qualification consists of competencies that a person must achieve that will enable him/her to acquire and store chemicals, make cylinder container for pyrotechnic products, wrap/package pyrotechnic products, load mixed composition into container, prepare safety fuse for fireworks and make firecrackers.

This Qualification is packaged from the competency map of PYROTECHNICS as shown in Annex A.

The units of Competency comprising this Qualification include the following:

CODE NO.	BASIC COMPETENCIES
500311105	Participate in workplace communication
500311106	Work in team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures

CODE NO.	COMMON COMPETENCIES
PYR311202	Observe procedures, specifications and manuals of instructions
PYR311203	Perform mensurations and calculations
PYR516201	Perform fire fighting and fire prevention
PYR311205	Apply quality standards
PYR513201	Apply first aid treatment

CODE NO.	CORE COMPETENCIES
PYR311301	Acquire and store chemicals
PYR311302	Make cylinder container for pyrotechnic products
PYR311303	Wrap/package pyrotechnic products
PYR311304	Load mixed composition into container
PYR311305	Prepare safety fuse for fireworks
PYR311306	Make firecrackers

A person who has achieved this Qualification is competent to be:

- **Assistant Pyrotechnician**
- **Pyrotechnician**

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in **PYROTECHNICS NC II**.

BASIC COMPETENCIES

UNIT OF COMPETENCY : PARTICIPATE IN WORKPLACE COMMUNICATION

UNIT CODE : 500311105

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from ***appropriate sources*** 1.2 Effective questioning , active listening and speaking skills are used to gather and convey information 1.3 Appropriate ***medium*** is used to transfer information and ideas 1.4 Appropriate non- verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and ***storage*** of information are used 1.7 Personal interaction is carried out clearly and concisely
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established ***protocols*** 2.4 ***Workplace interactions*** are conducted in a courteous manner 2.5 Questions about simple routine workplace procedures and maters concerning working conditions of employment are asked and responded to 2.6 Meetings outcomes are interpreted and implemented

3. Complete relevant work related documents	3.1 Range of ***forms*** relating to conditions of employment are completed accurately and legibly 3.2 Workplace data is recorded on standard workplace forms and documents 3.3 Basic mathematical processes are used for routine calculations 3.4 Errors in recording information on forms/ documents are identified and properly acted upon 3.5 Reporting requirements to supervisor are completed according to organizational guidelines

RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	1.1. Team members 1.2. Suppliers 1.3. Trade personnel 1.4. Local government 1.5. Industry bodies
2. Medium	2.1. Memorandum 2.2. Circular 2.3. Notice 2.4. Information discussion 2.5. Follow-up or verbal instructions 2.6. Face to face communication
3. Storage	3.1. Manual filing system 3.2. Computer-based filing system
4. Forms	4.1. Personnel forms, telephone message forms, safety reports
5. Workplace interactions	5.1. Face to face 5.2. Telephone 5.3. Electronic and two way radio 5.4. Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
6. Protocols	6.1. Observing meeting 6.2. Compliance with meeting decisions 6.3. Obeying meeting instructions

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Prepared written communication following standard format of the organization 1.2. Accessed information using communication equipment 1.3. Made use of relevant terms as an aid to transfer information effectively 1.4. Conveyed information effectively adopting the formal or informal communication
2. Underpinning Knowledge and Attitudes	2.1. Effective communication 2.2. Different modes of communication 2.3. Written communication 2.4. Organizational policies 2.5. Communication procedures and systems 2.6. Technology relevant to the enterprise and the individual's work responsibilities
3. Underpinning Skills	3.1. Follow simple spoken language 3.2. Perform routine workplace duties following simple written notices 3.3. Participate in workplace meetings and discussions 3.4. Complete work related documents 3.5. Estimate, calculate and record routine workplace measures 3.6. Basic mathematical processes of addition, subtraction, division and multiplication 3.7. Ability to relate to people of social range in the workplace 3.8. Gather and provide information in response to workplace Requirements
4. Resource Implications	4.1. Fax machine 4.2. Telephone 4.3. Writing materials 4.4. Internet
5. Methods of Assessment	5.1. Direct Observation 5.2. Oral interview and written test
6. Context for Assessment	6.1. Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY : WORK IN TEAM ENVIRONMENT

UNIT CODE : 500311106

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Describe team role and scope	1.1. The ***role and objective of the team*** is identified from available ***sources of information***
	1.2. Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources
2. Identify own role and responsibility within team	2.1. Individual role and responsibilities within the team environment are identified
	2.2. Roles and responsibility of other team members are identified and recognized
	2.3. Reporting relationships within team and external to team are identified
3. Work as a team member	3.1. Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives
	3.2. Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and ***workplace context***
	3.3. Observed protocols in reporting using standard operating procedures
	3.4. Contribute to the development of team work plans based on an understanding of team's role and objectives and individual competencies of the members.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	1.1. Work activities in a team environment with enterprise or specific sector 1.2. Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	2.1. Standard operating and/or other workplace procedures 2.2. Job procedures 2.3. Machine/equipment manufacturer's specifications and instructions 2.4. Organizational or external personnel 2.5. Client/supplier instructions 2.6. Quality standards 2.7. OHS and environmental standards
3. Workplace context	3.1. Work procedures and practices 3.2. Conditions of work environments 3.3. Legislation and industrial agreements 3.4. Standard work practice including the storage, safe handling and disposal of chemicals 3.5. Safety, environmental, housekeeping and quality guidelines

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1. Operated in a team to complete workplace activity 1.2. Worked effectively with others 1.3. Conveyed information in written or oral form 1.4. Selected and used appropriate workplace language 1.5. Followed designated work plan for the job 1.6. Reported outcomes
2. Underpinning Knowledge and Attitude	2.1. Communication process 2.2. Team structure 2.3. Team roles 2.4. Group planning and decision making
3. Underpinning Skills	3.1. Communicate appropriately, consistent with the culture of the workplace
4. Resource Implications	The following resources **MUST** be provided: 4.1. Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2. Materials relevant to the proposed activity or tasks
5. Methods of Assessment	Competency may be assessed through: 5.1. Observation of the individual member in relation to the work activities of the group 5.2. Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 5.3. Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
6. Context for Assessment	6.1. Competency may be assessed in workplace or in a simulated workplace setting 6.2. Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY: PRACTICE CAREER PROFESSIONALISM

UNIT CODE : 500311107

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships ~~is~~ are maintained in the course of managing oneself based on performance ***evaluation*** 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
1. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives. 2.2 ***Resources*** are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
2. Maintain professional growth and development	3.1 ***Trainings and career opportunities*** are identified and availed of based on job requirements 3.2 ***Recognitions*** are sought/received and demonstrated as proof of career advancement 3.3 ***Licenses and/or certifications*** relevant to job and career are obtained and renewed

RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Trainings and career opportunities	3.1 Participation in training programs 3.1.1 Technical 3.1.2 Supervisory 3.1.3 Managerial 3.1.4 Continuing Education 3.2 Serving as Resource Persons in conferences and workshops
4. Recognitions	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciations 4.4 Commendations 4.5 Awards 4.6 Tangible and Intangible Rewards
5. Licenses and/or certifications	5.1 National Certificates 5.2 Certificate of Competency 5.3 Support Level Licenses 5.4 Professional Licenses

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Attained job targets within key result areas (KRAs) 1.2 Maintained intra - and interpersonal relationship in the course of managing oneself based on performance evaluation 1.3 Completed trainings and career opportunities which are based on the requirements of the industries 1.4 Acquired and maintained licenses and/or certifications according to the requirement of the qualification
2. Underpinning Knowledge	2.1 Work values and ethics (Code of Conduct, Code of Ethics, etc.) 2.2 Company policies 2.3 Company-operations, procedures and standards 2.4 Fundamental rights at work including gender sensitivity 2.5 Personal hygiene practices
3. Underpinning Skills	3.1 Appropriate practice of personal hygiene 3.2 Intra and Interpersonal skills 3.3 Communication skills
4. Resource Implications	The following resources **MUST** be provided: 4.1 Workplace or assessment location 4.2 Case studies/scenarios
5. Methods of Assessment	Competency may be assessed through: 5.1 Portfolio Assessment 5.2 Interview 5.3 Simulation/Role-plays 5.4 Observation 5.5 Third Party Reports 5.6 Exams and Tests
6. Context for Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : **PRACTICE OCCUPATIONAL HEALTH AND SAFETY PROCEDURES**

UNIT CODE : **500311108**

UNIT DESCRIPTOR : This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Identify hazards and risks	1.1 ***Safety regulations*** and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures 1.2 ***Hazards/risks*** in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures 1.3 ***Contingency measures*** during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures
2. Evaluate hazards and risks	2.1 Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV) 2.2 Effects of the hazards are determined 2.3 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
3. Control hazards and risks	3.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed 3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies 3.3 ***Personal protective equipment (PPE)*** is correctly used in accordance with organization OHS procedures and practices 3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol\
4. Maintain OHS awareness	4.1 ***Emergency-related drills and trainings*** are participated in as per established organization guidelines and procedures 4.2 ***OHS personal records*** are completed and updated in accordance with workplace requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Safety regulations	May include but are not limited to: 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Philippine Occupational Safety and Health Standards 1.6 DOLE regulations on safety legal requirements 1.7 ECC regulations
2. Hazards/Risks	May include but are not limited to: 2.1 Physical hazards – impact, illumination, pressure, noise, vibration, temperature, radiation 2.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 2.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 2.4 Ergonomics • Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles • Physiological factors – monotony, personal relationship, work out cycle
3. Contingency measures	May include but are not limited to: 3.1 Evacuation 3.2 Isolation 3.3 Decontamination 3.4 (Calling designed) emergency personnel
4. PPE	May include but are not limited to: 4.1 Mask 4.2 Gloves 4.3 Goggles 4.4 Hair Net/cap/bonnet 4.5 Face mask/shield 4.6 Ear muffs 4.7 Apron/Gown/coverall/jump suit 4.8 Anti-static suits

VARIABLE	RANGE
5. Emergency-related drills and training	5.1 Fire drill 5.2 Earthquake drill 5.3 Basic life support/CPR 5.4 First aid 5.5 Spillage control 5.6 Decontamination of chemical and toxic 5.7 Disaster preparedness/management
6. OHS personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OHS-related training completed

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Explained clearly established workplace safety and hazard control practices and procedures 1.2 Identified hazards/risks in the workplace and its corresponding indicators in accordance with company procedures 1.3 Recognized contingency measures during workplace accidents, fire and other emergencies 1.4 Identified terms of maximum tolerable limits based on threshold limit value- TLV. 1.5 Followed Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace 1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices 1.7 Completed and updated OHS personal records in accordance with workplace requirements
2. Underpinning Knowledge and Attitude	2.1 OHS procedures and practices and regulations 2.2 PPE types and uses 2.3 Personal hygiene practices 2.4 Hazards/risks identification and control 2.5 Threshold Limit Value -TLV 2.6 OHS indicators 2.7 Organization safety and health protocol 2.8 Safety consciousness 2.9 Health consciousness
3. Underpinning Skills	3.1 Practice of personal hygiene 3.2 Hazards/risks identification and control skills 3.3 Interpersonal skills 3.3 Communication skills
4. Resource Implications	The following resources must be provided: 4.1 Workplace or assessment location 4.2 OHS personal records 4.3 PPE 4.4 Health records
5. Methods of Assessment	Competency may be assessed through: 5.1 Portfolio Assessment 5.2 Interview 5.3 Case Study/Situation
6. Context for Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

COMMON COMPETENCIES

UNIT OF COMPETENCY : OBSERVE PROCEDURES, SPECIFICATIONS AND MANUALS OF INSTRUCTIONS

UNIT CODE : PYR311202

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in identifying, interpreting, applying services to specifications and manuals, and storing manuals.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Identify and access specification/manuals	1.1 Appropriate manuals are identified and accessed as per job requirements. 1.2 Version and date of manual are checked to ensure that correct ***specification and procedure*** are identified.
2. Interpret manuals	2.1 Relevant sections/ chapters of specifications/manuals are located in relation to the work to be conducted. 2.2 Information and procedure in the manual are interpreted in accordance with industry practices.
3. Apply information in manual	3.1 ***Manual*** is interpreted according to job requirements. 3.2 Work steps are correctly identified in accordance with manufacturer's specification. 3.3 Manual data are applied according to the given task. 3.4 All correct sequencing and adjustments are interpreted in accordance with information contained on the manual or specifications.
4. Store manuals	4.1 Manual or specification is stored appropriately to ensure prevention of damage, ready access and updating of information when required in accordance with company requirements.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Procedures, Specifications and Mnanuals of instructions	Kinds of Manuals: • Manufacturer's Specification Manual • Repair Manual • Maintenance Procedure Manual • Periodic Maintenance Manual

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Identified and accessed specification/manuals as per job requirements. 1.2 Interpreted manuals in accordance with industry practices. 1.3 Applied information in manuals according to the given task. 1.4 Stored manuals in accordance with company requirements.
2. Underpinning Knowledge	2.1 Type of manuals used in Pyrotechnics Sector 2.2 Identification of symbols used in the manuals 2.3 Identification of units of measurements 2.4 Unit of conversion
3. Underpinning Skills	3.1 Reading and comprehension skills required to identify and interpret pyrotechnics manuals and specifications 3.2 Accessing information and data
4. Resource Implications	The following resources should be provided: 4.1 All manuals/catalogues relative to Pyrotechnics sector
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation 5.2 Questions/Interview
6. Context for Assessment	6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines 6.2 Assessment may be conducted in the workplace or simulated environment

UNIT OF COMPETENCY : **PERFORM MENSURATIONS AND CALCULATIONS**

UNIT CODE : **PYR311203**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in identifying and measuring objects based on the required performance standards.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Select measuring instrument	1.1 Object or component to be measured is identified, classified and interpreted to the appropriate ***geometric shape***. 1.2 Measuring tools are selected/identified as per object to be measured or job requirements 1.3 Correct specifications are obtained from relevant sources. 1.4 Appropriate measuring instruments are selected according to job requirements 1.5 Alternative measuring tools are used without sacrificing cost and quality of work.
2. Carry out measurements and calculations	2.1 Accurate ***measurements*** are obtained according to job requirements. 2.2 Alternative measuring tools are used without sacrificing cost and quality of work. 2.3 ***Calculation*** needed to complete work tasks are performed using four basic process of addition (+), subtraction (-) multiplication (x) and division(/) including but not limited to trigonometric functions, algebraic computations 2.4 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks. 2.5 Numerical computation is self-checked and corrected for accuracy. 2.6 Instruments are read to the limit of accuracy of the tool. 2.7 Systems of measurement are identified and converted according to job requirements/ISO 2.8 Workpieces are measured according to job requirements.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Geometric shape	Including but not limited to: 1.1 Round 1.2 Square 1.3 Rectangular 1.4 Triangle 1.5 Sphere 1.6 Conical
2. Measuring instruments	Including but not limited to: 2.1 tape measure 2.2 caliper 2.3 weighing scale
3. Measurements and calculations	Including but not limited to: 3.1 size 3.2 width 3.3 length 3.4 weight 3.5 area 3.6 volume 3.7 diameter 3.8 thickness 3.9 frequency

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Selected and prepared appropriate measuring instruments in accordance with job requirements 1.2 Performed measurements and calculations according to job requirements/ISO
2. Underpinning Knowledge	2.1 **TRADE MATHEMATICS/MENSURATION** 2.1.1 Four fundamental operation 2.1.2 Linear measurement 2.1.3 Dimensions 2.1.4 Unit conversion 2.1.5 Ratio and proportion 2.1.6 Trigonometric functions 2.1.7 Algebraic equations
3. Underpinning Skills	3.1 Performing calculation by addition, subtraction, multiplication and division: trigonometric functions and algebraic equations 3.2 Visualizing objects and shapes 3.3 Interpreting formulas for volume, areas, perimeters of plane and geometric figures 3.4 Proper handling of measuring instruments
4. Resource Implications	The following resources should be provided: 4.1 Workplace location 4.2 Problems to solve 4.3 Measuring instrument appropriate to carry out tasks 4.4 Instructional materials relevant to the propose activity
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation 5.2 Questions/Interview
6. Context for Assessment	6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines 6.2 Assessment may be conducted in the workplace or in a simulated environment

UNIT OF COMPETENCY : **PERFORM FIRE FIGHTING AND FIRE PREVENTION**

UNIT CODE : **PYR516201**

UNIT DESCRIPTOR : This unit identifies the competence required to prevent and fight fires including management of fire prevention measures, initiation and management of evacuation, emergency shutdown and isolation procedures and the execution and coordination of fire fighting operations.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Manage fire prevention procedures	1.1 Fire hazards are identified and action is taken to eliminate or minimize them 1.2 ***Fire detection and fire fighting equipment and systems*** are regularly checked and appropriate action is taken to ensure that they are operational 1.3 Appropriate educational activities are organized to ensure that personnel are aware of the dangers of fire, how to prevent it and what to do if a fire is detected 1.4 Personnel in the workplace are made aware of emergency procedures to be followed in the event of fire
2. Operate fire fighting equipment	2.1 ***Classes of fires*** are correctly identified in accordance with accepted fire-fighting practice 2.2 Correct portable fire-fighting equipment is selected and used to fight specific classes of fire 2.3 Class F fires are correctly extinguished with a fire blanket in accordance with accepted fire-fighting practice 2.4 ***Methods of extinguishing fire*** in the workplace are correctly applied 2.5 Correct techniques are applied for the setting up of foam-making equipment to extinguish B Class Fires on board vessel 2.6 Where applicable, correct techniques are used to recharge the various types of portable fire extinguisher 2.7 Where applicable, portable fire fighting equipment is confirmed as operational following recharging

3. Conduct interior search and rescue fire-fighting operations (where applicable)	3.1 Search and rescue operations in a smoke filled environment are correctly conducted as a member of a fire-fighting team in accordance with accepted fire-fighting practice 3.2 Interior fires are extinguished using appropriate firefighting equipment and procedures as a member of a fire fighting team in accordance with accepted firefighting practice 3.3 Lifeline signals are correctly used during interior firefighting operations

RANGE OF VARIABLES

VARIABLE	RANGE
1. Classes of fire	Class A 1.1 All solid materials, usually organic origin in nature (contains compounds of carbon) and generally produce glowing embers- i.e., wood, textiles, curtains, furniture and plastics Class B 1.2 All flammable liquids and solids, which can also be sub-divided into: 1.3 Miscible with water (i.e., petrol, oils, lubricants, paints and waxes) 1.4 Non miscible with water (i.e., alcohol) Class C 1.5 Fires involving domestic main gas, cylinder gases (i.e., Acetylene) or Liquid Petroleum Gases (LPG) such as Butane or Propane Class D 1.6 Fires involving metals (where water is generally ineffective and dangerous) i.e., metal powders such as magnesium, titanium, and alloys, etc. Class F 1.7 New class specifically dealing with high temperature (360 degree centigrade) cooking oils in large industrial catering kitchens, restaurants and take-away establishments, etc. Electrical 1.8 Electrical fires are not considered to continue a fire class on their own,, as electricity is a source of ignition that will feed the fire until removed. When the electrical supply has been isolated, the fire can be treated (generally) as Class A for extinguishing purposes. However, you should use a non-conducting agent on all possible occasions.

2. Fire detection and fire fighting equipment and system	2.1 Portable fire extinguisher including foam, water, CO2, dry chemical and wet foam 2.2 Fire blankets 2.3 CO2 fixed system 2.4 Foam installation including semi-portable and fixed system 2.5 Sprinkler system 2.6 Fire pumps (main and emergency fire pump) 2.7 Fire hoses, hydrants, branches and international shore connection
3. Methods of extinguishing fire	3.1 Cooling 3.2 Reducing the ignition temperature by taking the heat out of the fire – using water (limiting the temperature) 3.3 Smothering 3.4 Limiting the oxygen available by smothering and preventing the mixture of oxygen and flammable vapour – by use of foam or a fire blanket 3.5 Starving 3.6 Limiting the fuel supply – by removing the source of fuel; by switching off electrical power, isolating the flow of flammable liquids or pulling away burning wood or straw, etc. 3.7 Chemical reaction 3.8 By interrupting the chain of combustion and combining the hydrogen atoms with chlorine atoms in the hydrocarbon chain, e.g. Halons extinguisher (NB: Halons have now generally been withdrawn under the Montreal Protocol of 1990, as ozone depleting agents)

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Managed and implemented fire prevention measures and procedures on board a vessel 1.2 Assessed the operational capability of the fire detection and firefighting equipment and systems and initiate any required maintenance or replenishment action 1.3 Participated in simulated firefighting activities 1.4 Participated in search and rescue and firefighting teams 1.5 Implemented OHS principles and policies when carrying out firefighting duties 1.6 Communicated effectively with others as required during fire emergencies
2. Underpinning Knowledge	2.1 Types of fire detection, firefighting, life saving and safety equipment and systems used in the workplace and the procedures for their use. 2.2 Relevant regulations, code of practice, policies and procedures related to the maintenance of fire detection, fire fighting, the life saving and safety equipment and system 2.3 Faults that can occur with workplace fire detection, fire fighting, life saving and safety equipment and appropriate remedial action and solutions 2.4 Statutory and typical company requirements for the documentation of maintenance procedures and outcomes for fire detection, fire fighting, life saving and safety equipment and systems used in the workplace
3. Underpinning Skills	3.1 Procedures in checking and replacing consumable materials in typical workplace fire detection, fire fighting and safety equipment and system 3.2 Procedures in identifying and evaluating operational and maintenance problems with fire detection, fire fighting, life saving and safety equipment and systems and determining appropriate courses of action 3.3 Procedures in identifying and implementing improvements to maintenance for fire detection and fire fighting 3.4 Procedures in workplace housekeeping processes

4. Resource Implications	The following resources should be provided: 4.1 Workplace location 4.2 Tools and equipment appropriate to schedule housekeeping activities and to monitor and maintain working condition 4.3 Material relevant to the proposed activity
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation of application to tasks and questions related to underpinning knowledge 5.2 Under general guidance, checking various stages of the processes and at the completion of the activity against performance criteria and specifications 5.3 While tasks are being undertaken
6. Context for Assessment	6.1 Assessment may be conducted in the workplace or simulated environment 6.2 Assessment shall be observed while task are being undertaken whether individually or in group in accordance with the approved industry OHSA regulations

UNIT OF COMPETENCY : APPLY FIRST AID TREATMENT

UNIT CODE : PYR513201

UNIT DESCRIPTOR : This unit identifies the competence required to perform fist aid treatment to workers during a medical emergency in the workplace, including the performance of immediate life saving first aid until qualified medical assistance is available, the recognition of symptoms and sign of acute illness and or injury and the taking of appropriate action.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Perform immediate life saving first aid pending the arrival of medical assistance	1.1 The priorities of ***First Aid Care*** are correctly applied in real or simulated first aid situation 1.2 The DRABC Action Plan is correctly used to identify and control danger, loss of consciousness, loss of airway, breathing and circulation 1.3 An unconscious casualty is correctly placed in stable side position and the steps in clearing the airways to promote breathing in accordance with established first aid procedures 1.4 The correct method of Expired Air Resuscitation (EAR), External Cardiac Compression (ECC) and Cardio Pulmonary Resuscitation (CPR) is applied in real life resuscitation situation or in a simulated exercise using a mannequin
2. Recognize the symptoms and acute illness and or injury and take appropriate action	2.1 The ***conditions requiring special first aid procedures*** are correctly identified 2.2 A real or simulated unconscious casualty is cared for in accordance with established first aid procedures 2.3 Cause of respiratory failure and breathing difficulty are correctly identified and appropriate care is provided for a real or simulated casualty with obstructed breathing 2.4 The symptoms and signs of casualty with angina pain, heart attack and heart failure are correctly identified 2.5 The symptoms and signs of poisoning, bites and stings are correctly identified and appropriate immediate management of the conditions is provided in real or simulated situation 2.6 A real or simulated conscious casualty with an acute illness and or injury is cared for in accordance with established first aid procedures

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
3. Manage wounds and bleeding	3.1 Severe external bleeding is correctly controlled in a real or simulated situation 3.2 The symptoms and signs of severe internal bleeding are correctly identified and appropriate immediate management of these conditions is provided in a real or simulated situation 3.3 A real or simulated laceration, abrasion and a deep puncture wound is correctly manage in accordance with established first aid procedures 3.4 The signs of wound infection is correctly managed in accordance with established procedures
4. Manage burns	4.1 Immediate rescue procedures are correctly used in real or simulated first aid situations involving a burned casualty 4.2 The severity of burn is correctly assessed in terms of depth, position and size in accordance with established procedures 4.3 The correct method of treatment for burns and associated shock is correctly applied in real or simulated first aid situations involving a burned casualty
5. Manage bone, joint and muscles injuries	5.1 Symptoms and signs of fractures (simple and complicated) are correctly recognized in accordance with established first aid procedures 5.2 Problems and treatment associated with dislocated joints are correctly managed in accordance with established procedures 5.3 First aid treatment of pelvic and chest injuries and fractures of limbs, including immobilization techniques is correctly performed in accordance with established procedures 5.4 The symptoms and signs of sprains and strains are correctly identified in accordance with established procedures

6. Adapt first aid procedures for remote situations	6.1 Safety precautions needed to prevent accidents, illness and injuries and infection in remote situations are correctly applied in real or simulated situations 6.2 Identify and discuss the factors involved in the prevention of heat and cold exposure 6.3 The symptoms and signs of real or simulated casualty exposed to heat or cold are correctly identified including hyperthermia and hypothermia and appropriate management of the casualty carried out in accordance with established procedures 6.4 A real or simulated ill or injured person in remote conditions is correctly cared for until help arrives, including the monitoring of airway, breathing and heart beat, the control of pain, hydration and maintenance of body temperature 6.5 ***First aid resources and emergency equipment*** required for remote area situations are correctly identified and used in real or simulated situations in accordance with established first aid procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. First aid care in a workplace may need to be provided in situation involving:	1.1 Acute illness or injury 1.2 Laceration, abrasion and a deep puncture wounds 1.3 Respiratory failure and breathing difficulty 1.4 Shock as a result of severe injury 1.5 Abdominal, pelvic and chest injuries 1.6 Fractures of limbs 1.7 Poisoning, bites and stings 1.8 Sprains, strains and dislocations 1.9 Facial, ear and eye injuries 1.10 Suspected head, neck and back injuries
2. Conditions requiring special first aid procedures include:	2.1 Explosion injuries 2.2 Burns 2.3 Poisons and envenomation 2.4 Hypothermia and hyperthemia
3. First aid resources and equipment include:	3.1 Medicine cabinet 3.2 First aid boxes 3.3 Emergency first aid carry bags 3.4 Specific first aid resources 3.5 Roller bandages 3.6 Triangular bandages 3.7 Face masks 3.8 Cleaning swabs 3.9 Cleaning brush 3.10 Cleaning materials 3.11 Medicines

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Performed immediate life saving first aid 1.2 Recognized the symptoms and sign of acute illness and or injury and take appropriate action 1.3 Managed wounds and bleeding 1.4 Managed burns 1.5 Managed bone, joints and muscle injuries 1.6 Adapted first aid procedures for remote situation 1.7 Communicated effectively with others during provision of first aid 1.8 Prepared report on first aid situations and activities in accordance with company and regulatory requirements
2. Underpinning knowledge and attitude	2.1 Duties and responsibilities of the designated first aid officer in the workplace 2.2 Knowledge on ways on how disease can spread in the workplace and ways of preventing the spread 2.3 Legal issues related to administration of drugs and medicines in the workplace 2.4 Knowledge on body structures and functions relevant to possible injury, illnesses and disease that may be encountered in the workplace
3. Underpinning skills	3.1 Medical first aid procedures 3.2 Procedures for conducting an initial patient first aid treatment 3.3 Managing injuries and medical emergencies 3.4 Managing medical resources 3.5 Techniques for care of wounds 3.6 Correct methods of Expired Air Resuscitation (EAR), External Cardiac Compression (ECC) and Cardio Pulmonary Resuscitation (CPR)
4. Resource implications	The following resources should be provided: 4.1 Workplace location 4.2 Tools and equipment appropriate to schedule housekeeping activities and to monitor and maintain working condition 4.3 Material relevant to the activity and tasks

5. Method of assessment	Competency should be assessed through: 5.1 Direct observation of application to tasks and questions related to underpinning knowledge 5.2 Under general guidance, checking various stages of the processes and at the completion of the activity against performance criteria and specifications 5.3 While tasks are being undertaken
6. Context for assessment	6.1 Competency may be assessed in workplace or in a simulated workplace setting 6.2 Assessment shall be observed while task are being undertaken whether individually or in-group

UNIT OF COMPETENCY : APPLY QUALITY STANDARDS

UNIT CODE : PYR311205

UNIT DESCRIPTOR : This unit covers the knowledge and skills required in inspecting the work done against job specification and company standards, applying quality standards to work and protecting company property and customer interests.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Inspect work done against job specification	1.1 Inspections are conducted according to company ***quality systems and procedures*** 1.2 Job specification/work order and ***quality standards*** are identified 1.3 Faults are identified and processed according to company procedures
2. Apply quality standards to work	2.1 Monitoring of manufacturing processes is conducted to maintain quality standards 2.2 Quality standards are applied throughout the manufacturing processes 2.3 Activities are coordinated throughout the workplace for efficient quality work 2.4 Records of work quality are maintained according to the requirements of the company
3. Protect company property and customer interests	***3.1*** Possible damage to company property is avoided by adhering to ***company quality procedures*** 3.2 Quality of work is reviewed to ensure customer requirements and company standards are met

RANGE OF VARIABLES

VARIABLE	RANGE
1. Quality systems and procedures may include	1.1 ISO 9000 1.2 Phil. Quality Standard 1.3 Other relevant quality system standard 1.4 Industry/workplace codes of practice
2. Quality Standards may relate to:	2.1 Materials 2.2 Component parts 2.3 Final product 2.4 Production processes
3. Company quality procedures	3.1 Company quality system 3.2 Company operating procedures 3.3 Organization work procedures 3.4 Work instructions, patterns and designs

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Inspected and applied quality standards to work done 1.2 Protected company property and customer interests 1.3 Conducted periodic inspections during the job 1.4 Observed and assessed work against work specifications at completion of the job 1.5 Checked and completed documentation requirements written/electronic
2. Underpinning Knowledge and Attitudes	2.1 Communication/feedback methods 2.2 Company systems, processes and work quality requirements 2.3 Work inspection techniques 2.4 Quality assurance principles
3. Underpinning Skills	3.1 Inspection techniques 3.2 Monitoring process 3.3 Coordinating with co-workers for efficient quality work 3.4 Applied quality standards to work done
4. Resource Implications	The following resources should be provided: 4.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2 Materials relevant to the proposed activity or task
5. Methods of Assessment	5.1 Direct observation of work activities related to drafting and cutting of casual apparel pattern 5.2 Authenticated transcript of relevant education/training
6. Context for Assessment	6.1 Competency assessment may occur in workplace or any appropriately simulated environment 6.2 Assessment shall be observed while tasks are being undertaken

CORE COMPETENCIES

UNIT OF COMPETENCY : ACQUIRE AND STORE CHEMICALS FOR PYROTECHNIC PRODUCTS

UNIT CODE : PYR311301

UNIT DESCRIPTOR : This unit deals with the knowledge, skills and attitudes in procuring, handling and storing chemicals for pyrotechnic production in a safe manner.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Initiate procurement of chemicals for pyrotechnic product	1.1 Specifications and quantity of chemicals are prepared based on production requirements. 1.2 Sources/suppliers of chemicals are identified for procurement. 1.3 Chemicals are procured in accordance to ***legal and other statutory requirements***.
2. Store chemicals	2.1 All chemicals procured are properly identified and labeled in sealed container/packaging. 2.2 Chemicals are stored in warehouse/storage magazine or separate location designated for this purpose and in accordance with ***established/recommended procedures***. 2.3 Chemical materials are secured from rain or excessive heat during storage. 2.4 Storage area is cleaned up and made safe in accordance with OH & S requirements 2.5 ***Unexpected situations*** are responded to in accordance with company rules and regulations.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Legal or other statutory requirements	May include but not limited to: 1.1 Permit to possess explosive ingredients 1.2 Permit to transport 1.3 Permit to purchase 1.4 From other gov't. agencies having jurisdiction 1.5 Permit to manufacture
2. Established/recommended procedures	May include but not limited to: 2.1 Material Safety Data Sheet (MSDS) 2.2 Recommendation 2.3 Explosive Regulations
3. Unexpected situations	May include but not limited to: 3.1 Fire 3.2 Spark 3.3 Explosion 3.4 Smoke 3.5 Suffocation

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to compute the required chemicals based on production requirements. 1.2 Demonstrated ability to recommend specific suppliers/sources 1.3 Demonstrated understanding on the legal and other statutory requirements for procuring chemical. 1.4 Demonstrated ability to identify, mark and label chemicals according to content. 1.5 Demonstrated ability to separate and store chemicals to respective warehouse/magazine. 1.6 Following safety handling and storing procedures and practices.
2. Underpinning Knowledge	2.1 Basic Mathematics 2.2 Mensuration 2.3 Chemical dealers 2.4 Legal and statutory requirements for purchasing chemicals 2.5 Basic test of chemicals 2.6 Interpret product chemical manual
3. Underpinning Skills	3.1 Calculating 3.2 Measuring 3.3 Identifying chemical dealers 3.4 Interpreting legal and statutory requirements 3.5 Testing chemicals 3.6 Interpreting product chemical manual
4. Resource Implications	The following resources should be provided: 4.1 Warehouse/storage magazine 4.2 Laboratory 4.3 Chemicals and materials relevant to the activity
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation of application of tasks 5.2 Demonstration with oral questioning 5.3 Written test
6. Context for Assessment	6.1 Competency may be assessed in the workplace – to observe/check workmanship, correct function of work, length of time in doing the work

UNIT OF COMPETENCY : **MAKE CYLINDER CONTAINER FOR PYROTECHNIC PRODUCTS**

UNIT CODE : **PYR311302**

UNIT DESCRIPTOR : This unit covers the required knowledge, skills and attitudes in making cylinder container for ***pyrotechnic products.***

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Prepare paste	1.1 Work instruction is secured from ***appropriate personnel***. 1.2 Flour/starch is mixed with water and ***preservative*** based on desired concentration. 1.3 Mixture is boiled to desired consistency.
2. Roll and dry paper into cylinder or tubing	2.1 End of chipboard paper is scraped to desired thickness prior to rolling. 2.2 Appropriate thin film of paste is applied to ***paper***. 2.3 Paper is rolled into cylindrical container using former in accordance with ***specifications.*** 2.4 Rolled paper into cylinder tube is ***dried*** to desired condition/quality.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Pyrotechnic products	May include but not limited to: 1.1 Skyrockets/baby rockets 1.2 Illuminating candle/torch 1.3 Whistle bomb/crying cow 1.4 Trompillo 1.5 Roman candle
2. Appropriate personnel	May include but not limited to: 2.1 Pyrotechnician II 2.2 Pyrotechnician III 2.3 Pyrotechnician IV 2.4 Manager/Owner
3. Preservative	May include but not limited to: 3.1 Alum crystal/tawas 3.2 Vinegar 3.3 Copper sulfate 3.4 Lime/apog
4. Paper	May include but not limited to: 4.1 Chipboard 4.2 Newsprint 4.3 Kraft paper 4.4 Brown or Manila paper 4.5 Glazine paper
5. Specifications	May include but not limited to 5.1 Thickness 5.2 Length 5.3 Diameter 5.4 Width
6. Dried	May include but not limited to: 6.1 Sun dry 6.2 Air dry 6.3 Oven dry 6.4 Stir frying

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to produce cylinder containers to desired quality and specifications 1.2 Demonstrated ability to produce cylinder containers at the right time, desired quantity and with minimal wastage on the use of materials. 1.3 Demonstrated ability to follow work instructions.
2. Underpinning Knowledge	2.1 Procedures in preparing and preserving paste 2.2 Procedures in preparing cylinders for pyrotechnics 2.3 Types and uses of cylinder materials 2.4 Types and uses of preservatives 2.5 Follow work instructions
3. Underpinning Skills	3.1 Following procedures in preparing and preserving paste 3.2 Following procedures in preparing cylinders for pyrotechnics 3.3 Using cylinder materials 3.4 Using preservatives 3.5 Following work instructions
4. Resource Implications	The following resources should be provided: 4.1 Access to workplace and materials for producing cylinder containers 4.2 Materials and equipment relevant to the activity
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Demonstration or direct observation with oral questioning
6. Context for Assessment	6.1 Competency should be assessed while work is being undertaken at the work place or in a simulated venue.

UNIT OF COMPETENCY : **WRAP/PACKAGE PYROTECHNIC PRODUCTS**

UNIT CODE : **PYR311303**

UNIT DESCRIPTOR : This unit deals with the knowledge, skills and attitudes required in wrapping/packaging pyrotechnic products.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Wrap pyrotechnic products	1.1 ***Pyrotechnic products*** are wrapped using specified ***wrapping material.*** 1.2 Wrapping is performed in accordance with ***established wrapping procedures*** and safety precautions***.*** 1.3 ***Label*** is attached to wrapper for marketability, for instruction and proper use of pyrotechnics.
2. Pack pyrotechnic products	2.1 Wrapped loaded containers are ***dried*** based on product specification. 2.2 Wrapped loaded containers are packed, bundled and properly labeled according to ***specification.*** 2.3 Wrapped loaded containers are transported and stored in the warehouse.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Pyrotechnic products	May include but not limited to: 1.1 Skyrockets/baby rockets 1.2 Illuminating candle/torch 1.3 Whistle bomb/crying cow 1.4 Trompillo 1.5 Roman candle
2. Wrapping material	May include but not limited to: classified as: 2.1 Type e.g., Christmas wrapper, glossy paper 2.2 Size 2.3 Color
3. Established wrapping procedures	May include but not limited to: 3.1 Wrapping procedures for Skyrocket 3.2 Wrapping procedures for Whistle Bomb 3.3 Wrapping procedures for Fountain 3.4 Wrapping procedures for Roman Candle 3.5 Wrapping procedures for Trompillo
4. Label	May include but not limited to: 4.1 Product name 4.2 Manufacturer's name and address 4.3 DTI No. 4.4 License No. 4.5 Instructions for proper use of pyrotechnics 4.6 Warning signages
5. Specification	May include but not limited to: 5.1 Illuminating candle (100 pieces per bundle, per box) 5.2 Sparklers (packing by 100 pieces [1st 50 pieces with handle first; 2nd 50 pieces with sparklers first]) 5.3 Skyrockets (100 pieces per box) 5.4 Whistle bomb (100 pieces per box) 5.5 Packing by gross (144 pieces)
6. Dried	May include but not limited to: 6.1 Sun dry 6.2 Air dry

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to perform quality wrapping, labeling and packaging with minimal waste of material. 1.2 Demonstrated ability to perform drying, wrapping and packaging in accordance with established procedures and safety precautions.
2. Underpinning Knowledge	2.1 Sizes, types and colors of wrapping and packaging materials 2.2 Wrapping and packaging procedures 2.3 Labeling requirements 2.4 Handling and storage procedures for pyrotechnic products
3. Underpinning Skills	3.1 Using appropriate wrapping and packaging materials 3.2 Following wrapping and packaging procedures 3.3 Following labeling requirements 3.4 Applying handling and storage procedures
4. Resource Implications	The following resources should be provided: 4.1 Workplace locations 4.2 Wrapping and packaging materials 4.3 Sample of pyrotechnic products to be wrapped, labeled and packaged.
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Practical observation or demonstration with oral questioning
6. Context for Assessment	6.1 Assessment shall be undertaken while work is being performed in the workplace or in a simulated venue.

UNIT OF COMPETENCY : **LOAD MIXED COMPOSITION INTO CONTAINER**

UNIT CODE : **PYR311304**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes in loading mixed composition into container in a safe manner.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Load fireworks	1.1 Specific type of container is selected and checked based on product requirement 1.2 Chemical mixture and proportions are selected and checked based on fireworks quality requirements. 1.3 ***Mixed composition*** is loaded in ***container*** following ***loading procedures*** as per pyrotechnic product based on recommended standard and ***safety practices***. 1.4 Loading is performed using appropriate **tools *and equipment*** and with minimum wastage. 1.5 ***Unexpected situations*** are responded to in accordance with company rules and regulations
2. Install safety fuse	2.1 Safety fuse is installed according to ***product standard***. 2.2 Initial loaded mixture is tested as to desired performance and based on product requirements. 2.3 Deficiencies are corrected based on test performance. 2.4 Unexpected situations are responded to in accordance with company rules and regulations

RANGE OF VARIABLES

VARIABLE	RANGE
1. Mixed composition	May include but not limited to: 1.1 Pressed 1.2 Rolled 1.3 Wet 1.4 Dry 1.5 Sun dry 1.6 Rounded 1.7 Moulded
2. Container	May include but not limited to: 2.1 Paper tube 2.2 Triangular kraft paper 2.3 Plastic tube 2.4 Cone 2.5 Glazing paper 2.6 Newsprint 2.7 Spherical container (plastic or paper) 2.8 Chip board
3. Loading procedures	May include but not limited to: 3.1 Ram 3.2 Press 3.3 Pour 3.4 Mold
4. Safe practices	May include but not limited to: 4.1 Avoid use of metal accessories while loading 4.2 Avoid use of electronic devices with loading 4.3 Avoid use of fluorescent light in a nearby loading area 4.4 Avoid cooking in a nearby loading area 4.5 Use appropriate PPE e.g., dust mask 4.6 Fingernails are newly cut
5. Tools and equipment	May include but not limited to: 5.1 Tools o Paper funnel/imbudo o Rammer 5.2 Equipment o Apron o Dust mask o Gloves

VARIABLE	RANGE
6. Unexpected situations	May include but not limited to: 6.1 Sparks 6.2 Ignition/burning 6.3 Explosion 6.4 Chemical reactions 6.5 Accident due to testing
7. Product standard	May include but not limited to: 7.1 Philippine standard 7.2 International standard

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to follow work instructions 1.2 Demonstrated ability to identify the required materials. 1.3 Demonstrated ability to select prescribed container 1.4 Demonstrated ability to produce quality pyrotechnic products after loading operation 1.5 Demonstrated ability to follow proper loading procedures
2. Underpinning Knowledge	2.1 Interpret work instructions 2.2 Types and uses of containers 2.5 Follow product specifications 2.6 Follow proper loading procedures 2.7 Types and uses of PPE
3. Underpinning Skills	3.1 Interpreting work instructions 3.2 Using prescribed containers 3.3 Following safety requirements 3.4 Following product specifications 3.5 Following established loading procedures 3.6 Using PPE
4. Resource Implications	The following resources should be provided: 4.1 Workplace location 4.2 Chemicals and materials relevant to the activity
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation (actual) or demonstration and oral questioning
6. Context for Assessment	6.1 Assessment shall be done while the work is being performed in the workplace or in a simulated venue.

UNIT OF COMPETENCY : **PREPARE SAFETY FUSE FOR FIREWORKS**

UNIT CODE : **PYR311305**

UNIT DESCRIPTOR : This unit deals with the knowledge, skills and attitudes in preparing safety fuse for fireworks.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Prepare and mix fuse ingredients	1.1 Black powder is prepared from recommended raw material. 1.2 Fuse ingredients are weighed and measured in accordance with ***pyrotechnic product safety fuse specifications.*** 1.3 ***Chemical ingredients*** are pounded/sieved into desired mesh size. 1.4 Chemicals are mixed using ***wet process*** following safety and quality requirements.
2. Make fuse	2.1 Cotton string or paper is dipped/soaked in mixture in accordance with ***established procedures.*** 2.2 Soaked string is dried and wrapped and cut into pieces into desired specifications. 2.3 Sample safety fuse is tested according to job requirement. 2.4 Finished safety fuse stored in designated location in accordance with safety procedures.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Pyrotechnic product safety fuse specification	May include but are not limited to: 1.1 Initial fuse (burning time of not less than 3 seconds and not more than 6 seconds) 1.2 Time delayed fuse
2. Chemical ingredients	2.1 Potassium nitrate – 75% by weight 2.2 Charcoal – 15% by weight 2.3 Sulfur – 10% by weight
3. Wet process	May include but not limited to: 3.1 Quantity of water 3.2 Cotton strand 3.3 Binder
4. Established procedures	4.1 Manual process 4.1.1 Cotton string fuse: o Cotton string is dipped in slurry black powder mixture 4.1.2 Paper fuse: o Mixture is sprinkled on paper o Paper is then rolled 4.2 Automated process using fusemaking equipment

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to prepare fuse that meets safety fuse specifications 1.2 Demonstrated ability to follow safety precautions in preparing safety fuse 1.3 Demonstrated ability to select quality materials
2. Underpinning Knowledge	2.1 Correct selection of materials as to particle size and quality 2.2 Safety precautions 2.3 Follow work instructions 2.4 Use of appropriate PPE 2.5 Procedures in preparing safety fuse
3. Underpinning Skills	3.1 Selecting appropriate materials according to particle size and quality 3.2 Following work instructions 3.3 Carrying out safety precautions 3.4 Using appropriate PPE 3.5 Following safety procedures in preparing fuse 3.6 Communication skills
4. Resource Implications	The following resources should be provided: 4.1 Workplace location 4.2 Tools and equipment appropriate to prepare safety fuse 4.3 Chemical composition and materials
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation of application of tasks 5.2 Demonstration with oral questioning 5.3 Written test
6. Context for Assessment	6.1 Competency may be assessed in the workplace – to observe/check workmanship, correct function of work, length of time in doing the work

UNIT OF COMPETENCY : MAKE FIRECRACKERS

UNIT CODE : PYR311306

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required for making ***firecrackers*** in a safe manner.

ELEMENT	PERFORMANCE CRITERIA ***Italicized*** terms are elaborated in the Range of Variables
1. Prepare container for firecrackers	1.1 Work instruction is secured from ***appropriate personnel***. 1.2 ***Container*** is prepared in accordance with product requirement. 1.3 Paper container is folded in accordance with specifications.
2. Weigh/sieve/test firecracker's chemical composition	2.1 Weighing is performed using appropriate weighing scale. 2.2 Appropriate chemicals for safety fuse/firecrackers are identified in accordance with product and ***safety requirements.*** 2.3 Chemicals are weighed and measured in accordance with recommended ratio and proportion. 2.4 Chemicals are sieved using appropriate ***mesh sieving screen*** before and after mixing chemicals***.*** 2.5 Mixed chemical is tested according to desired performance 2.6 ***Unexpected situations*** are responded to in accordance with company rules and regulations.
3. Load chemical mixture into container	3.1 Work instruction is secured from appropriate personnel 3.2 Loading of chemical mixture is performed based on product requirements. 3.3 Firecracker products are sun dried in accordance with ***established drying procedures.*** 3.4 Unexpected situations are responded to in accordance to company rules and regulations

RANGE OF VARIABLES

VARIABLE	RANGE
1. Firecrackers	1.1 Triangle 1.2 El Diablo 1.3 Bawang
2. Appropriate personnel	2.1 Pyrotechnician III 2.2 Pyrotechnician IV 2.3 Manager/owner
3. Containers	3.1 Folded paper for triangle and bawang 3.2 Paper tubing for el diablo
4. Safety requirements	May include but not limited to: 4.1 Working in designated mixing area 4.2 Use of PPE e.g., mask 4.3 Avoid wearing of metal accessories 4.4 Avoid the use of synthetic materials
5. Mesh seiving screen	Commonly use mesh size: 5.1 60 5.2 40 5.3 30
6. Unexpected situations	May include but not limited to: 6.1 Fire 6.2 Spark 6.3 Explosion 6.4 Accident due to testing 6.5 Smoke 6.6 Suffocation
7. Established drying procedures	May include but not limited to: 7.1 Proper sun drying in a safe area (not in metal) in paper or wood on a paper top 7.2 Drying area is elevated

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to follow work instructions 1.2 Demonstrated ability to prepare quality container 1.3 Demonstrated ability to check the accuracy of a weighing scale 1.4 Demonstrated ability to follow safety requirements for weighing/sieving chemical composition for firecrackers 1.5 Demonstrated ability to weigh chemical composition according to correct ratio and proportion 1.6 Demonstrated ability to follow product requirement specifications. 1.7 Demonstrated ability to follow established drying procedures.
2. Underpinning Knowledge	2.1 Interpret work instructions 2.2 Types and uses of containers 2.3 Measuring scale 2.4Follow safety requirements for weighing/sieving chemical composition for fire crackers 2.5 Follow product specifications 2.6 Follow established drying procedures 2.7 Types and uses of PPE
3. Underpinning Skills	3.1 Identifying defective weighing scale 3.2 Interpreting work instructions 3.3 Using appropriate containers 3.4 Identifying defective measuring scale 3.5 Following safety requirements 3.6 Following product specifications 3.7 Following established procedures 3.8 Using appropriate PPE
4. Resource Implications	The following resources should be provided: 4.1 Workplace location 4.2 Chemicals and materials relevant to the activity
5. Methods of Assessment	Competency in this unit must be assessed through: 5.1 Direct observation (actual) or demonstration and oral questioning
6. Context for Assessment	6.1 Assessment shall be done while the work is being performed in the workplace or in a simulated venue.

SECTION 3 TRAINING STANDARDS

This set of standards provides Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for Pyrotechnics NC II.

This includes information on curriculum design, training delivery, trainee entry requirements, tools and equipment, training facilities, and trainers qualification.

3.1 CURRICULUM DESIGN

Course Title: *Pyrotechnics*
NC Level: *NC II*
Nominal Training Duration: **18 HOURS (Basic Competencies)**
24 HOURS (Common Competencies)
200 HOURS (Core Competencies)

Course Description:

This course is designed to enhance the knowledge, skills and attitude of Pyrotechnics in accordance with industry standards. It covers specialized competencies on acquiring and storing chemicals, making cylinder container for pyrotechnic products, loading mixed composition into container, preparing safety fuse and making firecrackers.

To obtain this, all units prescribed for this qualification must be achieved.

BASIC COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1 Participate in workplace communication	1.1 Obtain and convey Workplace information. 1.2 Complete relevant work related documents. 1.3 Participate in workplace meeting and discussion.	• Group discussion • Interaction	• Demonstration • Observation • Interviews/ questioning

2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team. 2.2 Describe work as a team member.	• Discussion • Interaction	• Demonstration • Observation • Interviews/ questioning
3. Practice career professionalism	3.1 Integrate personal objectives with organizational goals. 3.2 Set and meet work priorities. 3.3 Maintain professional growth and development.	• Discussion • Interaction	• Demonstration • Observation • Interviews/ questioning
4. Practice occupational health and safety	4.1 Evaluate hazard and risks 4.2 Control hazards and risks 4.3 Maintain occupational health and safety awareness	• Discussion • Plant tour • Symposium	• Observation • Interview

COMMON COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Observe procedures, specifications, and manuals of instructions	1.1 Identify and accessed specifications/manuals as per job requirements. 1.2 Interpret manuals in accordance with industry practices. 1.3 Identify symbols used in the Manuals. Identify the units of measurements and unit of convertion. 1.4 Store manuals in accordance with company requirements.	• Discussion • Lecture	• Written • Questioning • Observation

2. Perform mensurations and calculations	2.1 Select and prepare appropriate measuring instruments in accordance with job requirements. 2.2 Perform calculation using the four fundamental operation, trigonometric functions and algebraic equations. 2.3 Interpret formulas for volume, areas, perimeters of plane and geometric figures. 2.4 Visualize objects and shapes. 2.5 Perform measurements and calculation according to job requirements/ISO.	• Discussion • Lecture • Demonstration • Simulation	• Observation • Demonstration • Practical performance
3. Perform fire fighting and fire prevention	3.1 Identify and access specififfications/ manuals. 3.2 Manage and implement fire prevention measures and procedures 3.3 Check the operational capability of the fire detection and fire fighting equipment and system. Initiate any required maintenance. 3.4 Participate in simulated activities. 3.5 Conduct interior search and rescue fire fighting operations.	• Discussion • Lecture • Demonstration • Simulation	• Observation • Demonstration • Practical performance
4. Apply first aid treatment	4.1 Simulate immediate life saving first aid. 4.2 Simulate action on	• Discussion • Lecture • Demonstration • Simulation	• Observation • Demonstration • Practical performance

	recognize symptoms and acute illness / injury. 4.3 Simulate action on wounds, bleeding, burns, bone, joint and muscle injuries.		
5. Apply quality standard	5.1 Monitor the manufacturing processes to maintain quality standards. 5.2 Conduct random inspection throughout the manufacturing processes. 5.3 Inspect and apply quality standard to work done against job specification. 5.4 Check / record complete document requirements.	• Discussion • Lecture • Demonstration • Simulation	• Observation • Demonstration • Practical • performance

CORE COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Acquire and store chemicals for pyrotechnic products	1.1 Initiate procurement of chemicals for pyrotechnic product	Demonstration	Written Test Demonstration Oral Questioning
	1.2 Store chemicals	Demonstration	Written Test Demonstration Oral Questioning
2. Make cylinder container for pyrotechnic products	2.1 Prepare paste	Demonstration	Demonstration with Questioning
	2.2 Roll and dry paper into cylinder or tubing	Demonstration	Demonstration with Questioning

3. Wrap/package pyrotechnic product	3.1 Wrap pyrotechnic products	Demonstration	Demonstration with Questioning
	3.2 Pack pyrotechnic products	Demonstration	Practical Observation Demonstration with Questioning
4. Load mixed composition into container	4.1 Load fireworks	Demonstration	Demonstration with Questioning
	4.2 Install safety fuse	Demonstration	Demonstration with Questioning
5. Prepare safety fuse for fireworks	5.1 Prepare and mix ingredients	Demonstration	Written Test Demonstration with Questioning
	5.2 Make fuse	Demonstration	Demonstration with Questioning
6. Make firecrackers	6.1 Prepare container for firecrackers	Demonstration	Demonstration with Questioning
	6.2 Weigh /sieve/test firecracker's chemical composition	Demonstration	Demonstration with Questioning
	6.3 Load chemical mixture into container	Demonstration	Demonstration with Questioning

3.2 TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is individualized and self-paced;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training is based both on and off-the-job components;
- Allows for recognition of prior learning (RPL) or current competencies;
- Training allows for multiple entry and exit; and
- Approved training programs are Nationally Accredited

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.

- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer just facilitates the training delivery.

- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.

- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.

- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, audio, video or computer technologies.

3.3 TRAINEE ENTRY REQUIREMENTS

Trainees or students wishing to gain entry into this course should possess the following requirements:

- can communicate either oral and written
- physically and mentally fit
- at least 18 years old
- with good moral character
- can perform basic mathematical computation

This list does not include specific institutional requirements such as educational attainment, appropriate work experience, and others that may be required of the trainees by the school or training center delivering the TVET program.

3.4 TOOLS AND EQUIPMENT AND MATERIALS

PYROTECHNICS – NC II

Recommended list of tools, equipment and materials for the training of 25 trainees for Pyrotechnics - NC II

TOOLS		EQUIPMENT		MATERIALS	
QTY		QTY		QTY	
25 pcs	Former	5 units	Weighing Scale	25 pcs	Chipboard (Gauge 120
25 pcs	Hammer	5 units	Electric Drill	25 pcs	Chipboard (Gauge 90)
25 pcs	Rubber Hammer	2 units	Electric Grinder	1 ream	Newsprint
25 pcs	Wooden Hammer	2 units	Ball Mill	1 ream	Glazing Paper
25 pcs	Pliers	5 units	Molder	5 rolls	Cotton String
25 pcs	Scissors	2 units	Sorting Machine	1 ream	Kraft Paper
25 pcs	Blade Cutter	2 units	Two (2) Headed Pedestal Grinder	1 sack	Clay
25 pcs	Tape Measure	2 units	Motor One (1) Horse Power	1 sack	Flour (3rd class)

TOOLS		EQUIPMENT		MATERIALS	
QTY		**QTY**		**QTY**	
25 pcs	Caliper	2 units	Drier	25 pcs	Paper Cone (kome)
25 pcs	Timer	5 units	Casserole (medium)	5 rolls	Masking Tape (1")
25 pcs	Knife			5 rolls	Masking Paper (3/4")
25 pcs	Sharpening Stone			5 btls	***Glue***
25 pcs	Water Basin			5 btls	Paste
25 pcs	Small Pail			5 pcs	Sticky Wax
25 pcs	Medium Pail			100 pcs	Bamboo Stick
25 pcs	Water Dipper			100 pcs	"Buli" Stick
25 pcs	Brush (escoba)			25 pcs	Water Cellophane
25 pcs	Funnel (cardboard)			1 broom	Broom Stick
25 pcs	Screen Net (cloth)			1 liter	Detergent
25 pcs/ each	Wire Mesh (Gauge 30, 40,60)			1 roll	Manila Paper
25 pcs	Measuring Tape			5 roll	Ribbon (3/4")
25 pcs	Glue Gun			25 pcs	Wrapping Paper
25 pcs	Spindle			5 kls	Potassium Nitrate
5 units	Ladle			1 sack	Charcoal
5 units	Wooden scoop			5 kls	Sulfur
				5 kls	Potassium Chlorate
				5 kls	Potassium Perchlorate
				5 kls	Aluminum Powder (fine, medium, coarse)

3.5 TRAINING FACILITIES

PYROTECHNICS NC - II

Based on a class intake of 25 students/trainees

Space Requirement	Size in Meters	Area in Sq. Meters	Total Area in Sq. Meters
Building (permanent)		73	73 sq. m
Lecture Room	5 X 8 m	40 sq. m	40 sq. m
Learning Resource Center	3 X 5 m	15 sq. m	15 sq. m
Admin. and First Aid Room	3 X 5 m	15 sq. m	15 sq. m
Wash Area (Male & Female)	1.5 X 2 m	3 sq. m	3 sq. m
Demo Room (Separate Bldg.) Note: 1. 60 meters away from residential area 2. 20 meters distance between processing station 3. Demo should accommodate 1 group at a time (5pax/group) 4. Maximum of 500g mixed composition at a time	5 X 5 m	25 sq. m	25 sq. m
Storage Room (Separate Bldg.) Note: 25 meters away from Demo Room	4 X 4 m	16 sq. m	16 sq. m

3.6 TRAINER'S QUALIFICATION

PYROTECHNICS - NC II

TRAINER QUALIFICATION (TQ II)

- Must be a holder of NC III
- Must have undergone training on Training Methodology II (TM II)
- Must be physically and mentally fit
- *Must have at least 5 years job/industry experience

* Optional. Only when required by the hiring institution

Reference: TESDA Board Resolution No. 2004 03

3.7 INSTITUTIONAL ASSESSMENT

Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

4.1 To attain the National Qualification of **Pyrotechnics NC II**, the candidate must demonstrate the competence in all the units listed in Section 1. Successful candidate shall be awarded a National Certificate signed by the TESDA Director General.

4.2 The qualification of **Pyrotechnics NC II** may be attained through:

4.2.1 Accumulation of Certificates of Competency (COCs) in all the following areas:

4.2.1.1 Acquire and store chemicals

4.2.1.2 Make cylinder container for pyrotechnic products

4.2.1.3 Wrap/package pyrotechnic products

4.2.1.4 Load mixed composition into container

4.2.1.5 Prepare safety fuse for fireworks

4.2.1.6 Make firecrackers

Successful candidates shall be awarded Certificates of Competency (COCs) bearing the signature of the Regional Director and Chair of the recognized local industry body.

4.2.2 Demonstration of competence through project-type assessment covering all required units of the qualification.

4.3 Assessment shall focus on the core units of competency. The tool and common units shall be integrated or assessed concurrently with the core units.

4.4 The following are qualified to apply for assessment and certification:

4.4.1 Graduates of formal, nonformal and informal including enterprise-based training programs

4.4.2 Experienced Workers (wage employed or self-employed)

4.5 The guidelines on assessment and certification are discussed in detail in the Procedures Manual on Assessment and Certification and Guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS).

COMPETENCY MAP- PYROTECHNICS NC II

CORE COMPETENCIES

Acquire and store chemicals	Make cylinder container for pyrotechnic products	Wrap/package pyrotechnic products	Load mixed composition into container	Prepare safety fuse for fireworks	Make firecrackers
Make pyrotechnic products	Plan and operate firework display	Develop design for fireworks			

COMMON COMPETENCIES

Observe procedures, specifications and manuals of instructions	Perform mensurations and calculations	Perform fire fighting and fire prevention	Apply quality standards	Apply first aid treatment

BASIC COMPETENCIES

Participate in workplace communication	Work in team environment	Practice career professionalism	Practice occupational health and safety procedures	Receive and respond to workplace communication	Work with others
Demonstrate work values	Practice basic Housekeeping Procedures	Lead in workplace communication	Utilize specialist communication skills	Lead small team	Apply problem solving Techniques in the workplace
Plan and organize work					

Pyrotechnics NC II

GLOSSARY OF TERMS

Binder	This can be sugar or starch. Mixed with water, these chemicals form a slurry that can be coated on a wire (by dipping) or poured into a tube.
Black Match	A fuse made from string that is impregnated with Black Powder.
Black Powder	Material found in fireworks. This material can be used as a propellant charge, to produce sound, as a constituent of other compositions, or in the ignition fuse or timing system of fireworks. Also known as gun powder.
Certification	The process of verifying and validating competencies of a person through qualifications assessment.
Chemical Composition	All pyrotechnic and explosive composition contained in a fireworks device. Inert materials (such as clay used for plugs or organic matter used for density) are not considered to be part of chemical composition.
Competency	refers to the specification of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace
Display Fireworks	(formerly known as special fireworks) Large fireworks articles designed to produce visible or audible effects for entertainment purposes by combustion, deflagration, or detonation.
Display Site	The immediate area where a fireworks display is conducted, including the discharge site, the fallout area, and the required separation distance from mortars to spectator viewing areas, but not spectator viewing areas or vehicle parking areas.
Dud	Any device in which the fuse or igniter fails to ignite the main pyrotechnic charge. The term, dud, is reported to have originated as an acronym for dangerous unexploded device.
Electrical Firing Unit	A device that provides and controls the electric current used to ignite fireworks during a display.

Electrical Firing Unit, Automatic	A panel or box that operates automatically to provide the source of electric current used to ignite electric matches.
Electrical Firing Unit, Handheld	A small, handheld unit with manually operated switches that control the flow of electric current to electric matches attached to fireworks devices.
Electrical Firing Unit, Manual	A panel or box with manually operated switches that control the flow of electric current to electric matches attached to fireworks devices.
Electrical Ignition	A technique used to ignite fireworks using a source of electric current.
Electric Match	An electric device that contains a small amount of pyrotechnic material that ignites when current flows through the device.
Element	Are the building blocks of a unit of competency. It describe in outcome terms the functions that a person who works in a particular area of work is able to perform.
Evidence Guide	Guide for assessment that provides information on critical aspects of competency, underpinning knowledge, underpinning skills, resource implications, context of assessment and assessment method.
Explosive	(Technical Definition) Any material that is capable of undergoing a self-contained and self-sustained exothermic chemical reaction at a rate that is sufficient to produce substantial pressures on their surroundings, thus causing physical damage. Explosives fall into 2 classes, detonating and deflagerating.
Explosive Composition	Any chemical compound or mixture, the primary purpose of which is to function by explosion, producing an audible effect.
Fire	To ignite pyrotechnics by using an electric match, electrical current, or some other means.
Firecrackers	Consist of either black powder (also known as gunpowder) or flash powder in a tight paper tube with a fuse to light the powder.

Fireworks	Any composition or device for the purpose of producing a visible or an audible effect by combustion, deflagration, or detonation, and that meets the definition of consumer fireworks or display fireworks.
Fireworks Display	A presentation of fireworks for a public or private gathering.
Flash Powder	Mixtures which contain powdered aluminum or a magnesium/aluminum alloy which, when ignited, can result in a violent explosion and flash.
Fountain	Device that projects a spray of sparks.
Fuel	Material (charcoal or sulfur) that can be burned or otherwise consumed to produce heat.
Fuse	Provides a time delay so the shell explodes at the right altitude.
Gerb	Small fountain sometimes used with lance-work set pieces.
Girandola	Special wheel which rises rapidly in the air while emitting a spray of sparks and, sometimes, a whistle.
Labels	All legal consumer explosives have mandatory labeling requirements. Included on these labels should be the manufacturer's name and address, cautions, and directions for use.
Level	Refers to the category according to the level of difficulty and complexity of skills and knowledge required to the job
Low Level Fireworks	(Also Ground-to-Air Fireworks) Any of a class of fireworks devices that either perform below approximately 200 feet (60 m) or begin their display at ground level and rise to complete their effect. Some examples of low level fireworks are comets, mines, roman candles, and many consumer fireworks.
Mortar	A tube from which certain aerial devices are fired into the air.
Mortar Rack	Sturdy wooden or metal frames used to support mortars in an upright position usually above ground.

Occupational Safety and Health Center	(OSHC) - A government agency that promotes and protects workers' welfare through effective implementation of the OSH programs that will enhance productivity and subsequently contribute to national economic development efforts as well as preventive approach of reducing/eliminating occupational accidents and illnesses in the workplace.
Performance Criteria	Are evaluative statements that specify what is to be assessed and the required level of performance
PTQF	It provides a comprehensive, nationally consistent framework for qualifications in the TVET sector. It also provides the parameter for the integration of learning and assessment in the middle skills development
Pyrotechnic Device	Any device containing pyrotechnic materials and capable of producing a special effect.
Pyrotechnic Material	A chemical mixture used in the entertainment industry to produce visible or audible effects by combustion, deflagration, or detonation.
Pyrotechnic Special Effect	A special effect created through the use of pyrotechnic materials and devices.
Pyrotechnics	Controlled exothermic chemical reactions that are timed to create the effects of heat, gas, sound, dispersion of aerosols, emission of visible electromagnetic radiation, or a combination of these effects to provide the maximum effect from the least volume.
Qualification	Refers to the national certificate issued by the TESDA or its accredited industry organizations in recognition that a person has achieved competencies relevant to a trade or industry.
Range of Variable	Describes the circumstances or context in which the work is to be performed.
Roman Candle	A chain-fused firework that propels a series of aerial shell, comet or mine effects into the air from a single tube.
Safety Cap	A tube, closed at one end that is placed over the end of the fuse until intended ignition to protect it from damage and accidental ignition.

Sparklers	A very different from firecrackers. A sparkler burns over a long period of time (up to 1 minute) and produces extremely bright and showery light.
Theatrical Pyrotechnics	Pyrotechnic devices for professional use in the entertainment industry. Similar to consumer fireworks in chemical composition and construction but not intended for consumer use.
Unit of competency	Describe a work activity.

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