National Occupational Standards - Vehicle Body Building Operations

NOS G1 – Contribute to Housekeeping in Motor Vehicle Environments

UNIT OVERVIEW

This unit is about the routine maintenance of the workplace, carrying out basic, non-specialist checks of work tools and equipment, cleaning the work area and using resources economically.

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard

1. **Equipment maintenance** covers:
   a. routine checks on work tools and equipment
   b. cleaning work tools and equipment
   c. replacing minor parts
   d. visual inspection of electrical equipment

2. **Housekeeping activities** cover:
   a. day to day work area cleaning
   b. clearing away
   c. dealing with spillages
   d. disposal of waste, used materials and debris

3. **Work tools and equipment** are:
   a. hand
   b. electrical
   c. mechanical
   d. pneumatic
   e. hydraulic

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the scope of your job responsibilities for the use and maintenance of hand tools, equipment and your work area.
2. workplace policies and schedules for **housekeeping activities** and **equipment maintenance**.
3. the manufacturer's requirements for the cleaning and general, non-specialist maintenance of the tools and equipment for which you are responsible.
4. the regulations and information sources applicable to workshop cleaning and maintenance activities for which you are responsible.
5. the importance of reporting faults quickly to the relevant person.

6. the importance of reporting anticipated delays to the relevant person(s) promptly.

Equipment maintenance

7. how to select and use equipment used for basic hand tool maintenance activities.
8. how to store hand tools safely and accessibly.
9. how to report faulty or damaged **work tools and equipment.**
10. how to work safely when cleaning and maintaining **work tools and equipment**.

General work area housekeeping

11. how to select and use cleaning equipment
12. how to use resources economically.
13. how to use work area cleaning materials and agents.
14. how to clean and maintain the **work tools and equipment** and work areas for which you are responsible.
15. how to dispose of unused cleaning agents, materials and debris.
16. the properties and hazards associated with the use of cleaning agents and materials.
17. the importance of wearing personal protective equipment.
18. the importance of using resources economically and for their intended purpose only.

PERFORMANCE OBJECTIVES

To be competent you must:

a. wear suitable personal protective equipment throughout all housekeeping and equipment maintenance activities.
b. select and use cleaning equipment which is:
   - of the right type
   - suitable for the task.
c. use resources economically and for their intended purpose only, following manufacturers' instructions and workplace procedures.
d. follow workplace policies, schedules and manufacturers' instructions when cleaning and maintaining hand tools and equipment.
e. clean the work area(s), for which you are responsible, at the specified time and frequency.
f. carry out housekeeping activities safely and in a way which minimises inconvenience to customers and staff.
g. follow the manufacturer's instructions when using cleaning and sanitising agents.
h. ensure your housekeeping activities keep your work area clean and free from debris and waste materials.
i. ensure your equipment maintenance activities keep your work tools and equipment fit for purpose.
j. dispose of used cleaning agents, materials and debris to comply with legal and workplace requirements.
k. store your work tools and equipment in a safe manner which permits ease of access and identification for use.
l. report any faulty or damaged tools and equipment to the relevant person(s) clearly and promptly.
m. report any anticipated delays in completion to the relevant person(s) promptly.

NOS G2 – Reduce Risks to Health and Safety in the Motor Vehicle Environment

UNIT OVERVIEW

This unit covers the basic, legally required health and safety duties of everyone in the workplace. It describes the competence required to ensure that:

- your own actions do not create any health and safety risks
- you do not ignore significant risks in your workplace, and
- you take sensible action to put things right, including reporting situations which pose a danger to people in the workplace, and seeking advice from others

This unit does **not** require you to undertake a full Risk Assessment. It is about having an appreciation of significant risks in the workplace and knowing how to identify them and deal with them.

When you have completed this unit, you will have proved you can:

1. Identify hazards and evaluate risks in your workplace
2. Reduce the risks to health and safety in your workplace

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard

1. Risks resulting from:

a. the use and maintenance of machinery or equipment
b. the use of materials or substances
c. working practices which do not conform to laid down policies
d. unsafe behaviour
e. accidental breakages and spillages
f. environmental factors
g. working at height
h. lifting operations and manual handling
i. incorrect use of personal protective equipment

2. Workplace policies covering:

a. the use of safe working methods and equipment
b. the safe use of hazardous substances
c. smoking, eating, drinking and drugs
d. what to do in the event of an emergency
e. personal presentation
f. personal protective equipment
g. lifting operations and manual handling
h. working at height
i. mobile phones and personal stereo equipment

ESSENTIAL KNOWLEDGE

You need to understand:

Health and Safety Legislation and Workplace Policies

1. your legal duties for health and safety in the workplace as required by the Health and Safety at Work Act 1974, and any other policies or procedures that govern your working practices.
2. your duties for health and safety as defined by any specific legislation covering your job role
3. agreed workplace policies relating to controlling risks to health and safety
4. responsibilities for health and safety in your job description
5. the responsible persons to whom you report health and safety matters

Risks to Health and Safety

6. what hazards may exist in your workplace, (e.g. Slips, trips and falls).
7. health and safety risks which may be present in your own job role and the precautions you must take
8. the importance of remaining alert to the presence of hazards in the whole workplace
9. how to deal with and report risks
10. the importance of dealing with or promptly reporting risks
11. the requirements and guidance on the precautions
12. the specific workplace policies covering your job role
13. suppliers' and manufacturers' instructions for the safe use of equipment, materials and products
14. safe working practices for your own job role
15. the importance of personal presentation in maintaining health and safety in the workplace
16. the importance of personal conduct in maintaining the health and safety of yourself and others
17. the importance of personal protective equipment, when and where it should be used and the importance of maintaining it correctly.
18. your scope and responsibility for rectifying risks
19. workplace procedures for handling risks which you are unable to deal with

PERFORMANCE OBJECTIVES

To be competent you must:

a. carry out your working practices in accordance with legal requirements
b. identify the correct personal and vehicle protective equipment required to correctly carry out your workplace practices
c. carry out your workplace practices using the correct personal protective equipment
d. follow the most recent workplace policies for your job role
e. rectify health and safety risks that are within your capability and scope of your job responsibilities
f. pass on any suggestions for reducing risks to health and safety within your job role to the responsible persons
g. ensure your personal conduct in the workplace does not endanger the health and safety of yourself or other persons
h. follow the workplace policies and suppliers’ or manufacturers’ instructions for the safe use of equipment, materials and products

i. report any differences between workplace policies and suppliers' or manufacturers' instructions as appropriate

j. ensure your personal presentation at work:
   - ensures the health and safety of yourself and others,
   - meets any legal duties, and
   - is in accordance with workplace policies

NOS G3 – Maintain Working Relationships in the Motor Vehicle Environment

UNIT OVERVIEW

This unit is about maintaining good working relationships with all colleagues in the working environment by using effective communication and support skills.

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard

1. **Colleagues** are:
   a. immediate work colleagues
   b. supervisors and managers

2. **Requests for assistance** covering:
   a. technical assistance
   b. personal assistance

ESSENTIAL KNOWLEDGE

You need to understand:

Your responsibilities and constraints

1. your own and your colleague's job role and limits of responsibility for giving advice and support.
2. the operational constraints which may affect interaction with colleagues.
3. lines of communication within your workplace.

Communication skills and working relationships

4. how to use suitable and effective spoken communication skills when responding to and interacting with others.
5. how to adapt written and spoken communication methods to satisfy the needs of colleagues.
6. how to report problems using written and spoken methods of communication.
7. the importance of developing positive working relationships with colleagues – the effect on morale, productivity, and company image.
8. the importance of accepting other peoples' views and opinions.
9. the importance of making and honouring realistic commitments to colleagues.

PERFORMANCE OBJECTIVES

To be competent you must:

a. contribute actively to team working by initiating ideas and co-operating with colleagues.

b. respond promptly and willingly to requests for assistance from colleagues which fall within the limits of your own job responsibilities and capabilities.
c. where requests fall outside your responsibility and capability, refer colleagues to the relevant person(s).
d. give colleagues sufficient, accurate information and support to meet their work needs.
e. make requests for assistance to colleagues clearly and courteously.
f. use methods of communication which meet the needs of colleagues.
g. treat colleagues in a way which shows respect for their views and opinions and promotes goodwill.
h. make and keep achievable commitments to colleagues
i. inform colleagues promptly of any problems or information likely to affect their own work.

NOS G6 – Enable Learning through Demonstration and Instruction (Imported ICS unit L11)

UNIT OVERVIEW

This unit is about demonstrating skills and methods to learners and instructing learners in procedures and processes.

These include; demonstrating how equipment is used, showing a learner how to do something, giving learners instructions on what to do or how to carry out a particular activity, deciding when you should use demonstration or instruction to encourage learning, reviewing the potential use of technology-based learning, checking on the progress of learners and giving feedback to learners.

ESSENTIAL KNOWLEDGE

You need to understand:

The nature and role of demonstrations and instruction

1. the separate areas of demonstrations which encourage learning
2. which types of learning are best achieved and supported through demonstrations
3. how to identify and use different learning opportunities
4. how to structure demonstrations and instruction sessions
5. how to choose from a range of demonstration techniques

Principles and concepts

6. how to put learners at their ease and encourage them to take part
7. how to choose between demonstration and instruction as learning methods
8. how to identify individual learning needs
9. which factors are likely to prevent learning and how to overcome them
10. how to check learners' understanding and progress
11. how to put information in order and decide whether the language you will be using is appropriate
12. how to choose and prepare appropriate materials, including technology based materials
13. the separate areas of instructional techniques which encourage learning
14. which types of learning are best achieved and supported through instruction

External factors influencing human resource development

15. how to make sure everybody acts in line with health, safety and environmental protection l legislation and best practice.
16. how to analyse and use developments in learning and new ways of delivery, including technology-based learning.

PERFORMANCE OBJECTIVES

1. Demonstrate skills and methods to learners

To be competent you must:

a. base the demonstration on an analysis of the skills needed and the order they must be learned in.
b. ensure that the demonstration is accurate and realistic.
c. structure the demonstration so the learner can get the most out of it.
d. encourage learners to ask questions and get explanation at appropriate stages in the demonstration.
e. give learners the opportunities to practise the skill being demonstrated and give them positive feedback.
f. give extra demonstrations of the skills being taught to reinforce learning.
g. ensure that demonstrations take place in a safe environment and allow learners to see the demonstration clearly.
h. respond to the needs of learners during the demonstration.
i. reduce distractions and disruptions as much as possible.

1. Instruct learners

To be competent you must:

a. match instruction to the needs of the learners.
b. identify which learning outcomes will be achieved through instruction.
c. ensure that the manner, level and speed of the instruction encourages learners to take part.
d. regularly check that learners understand and adapt instruction as appropriate.
e. give learners positive feedback on the learning experience and the outcomes achieved.
f. identify anything that prevents learning and review this with the learners.

NOS G8 – Identify and Agree the Motor Vehicle Customers Needs

UNIT OVERVIEW

This unit is about: gaining information from customers on their perceived needs; giving advice and information and agreeing a course of action; completing all necessary records and instructions.

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the content and limitations of company and product warranties for the vehicles dealt with by your company.
2. the limits of your own authority for accepting vehicles.
3. the importance of keeping customers informed of progress.
4. your workplace requirements for the completion of records.
5. how to complete and process all the necessary documentation.
6. the importance of advising the relevant person promptly on matters relating to customer requirements and any subsequent amendments to specification

Customer communication and care

7. how to communicate effectively with, and listen to, customers.
8. how to adapt your language when explaining technical matters to non-technical customers.
9. how to use effective questioning techniques.
10. how to care for customers and achieve customer satisfaction.

Company products and services

11. the range of options available to resolve vehicle problems.
12. the range and type of services offered by your company.
13. the effect of resource availability upon the receipt of customer vehicles and the completion work.

PERFORMANCE OBJECTIVES

To be competent you must:

a. obtain sufficient, relevant information from the customer to make an assessment of their own and perceived vehicle needs.
b. provide customers with accurate, current and relevant advice and information on:
   - potential courses of action
   - the implications of courses of action on build time and possible cost
c. provide advice and information clearly and in a form and manner which the customer will understand.
d. actively encourage customers to ask questions and seek clarification during your conversation.

e. support the accurate identification and clarification of customer and vehicle needs, by referring to:
   - vehicle data
   - operating procedures

f. confirm your customer's understanding of the agreement you have made.

g. ensure your recording systems are complete, accurate, in the format required and passed on to the relevant person promptly for appropriate action.

h. pass all completed records to the next person in the process promptly.

i. gain further customer approval through the appropriate channels where the contracted agreement is likely to be exceeded.

NOS G11 - Supervisory Skills
(Imported MSC Unit D6)

UNIT OVERVIEW

What is the unit about?

This unit is about ensuring that the work required in your area of responsibility is effectively planned and fairly allocated to individuals and/or teams. It also involves monitoring the progress and quality of the work of individuals and/or teams to ensure that the required level or standard of performance is being met and reviewing and updating plans of work in the light of developments. The 'area of responsibility' may be, for example, a branch or department or functional area or an operating site within an organisation.

Who is the unit for?

The unit is recommended for first line managers and middle managers.

Skills

Listed below are the main generic 'skills' which need to be applied in allocating and monitoring the progress and quality of work in your area of responsibility. These skills are explicit/implicit in the detailed content of the unit and are listed here as additional information.

- Communicating
- Consulting
- Decision making
- Delegating
- Information management
- Leadership
- Managing conflict
- Monitoring
- Motivating
- Planning
- Problem solving
- Providing feedback
- Prioritising
- Reviewing
- Setting objectives
- Stress management
- Valuing and supporting others.

KNOWLEDGE AND UNDERSTANDING

You need to know and understand the following:

General knowledge and understanding

1. How to select and successfully apply different methods for communicating with people across an area of responsibility

2. The importance of confirming/clarifying the work required in your area of responsibility with your manager and how to do this effectively
3. How to identify and take due account of health and safety issues in the planning, allocation and monitoring of work
4. How to produce a plan of work for your area of responsibility, including how to identify any priorities or critical activities and the available resources
5. How to identify sustainable resources and ensure their effective use when planning the work for your area of responsibility
6. The importance of seeking views from people working in your area and how to take account of their views in producing the plan of work
7. The values, ethics, beliefs, faith, cultural conventions, perceptions and expectations of any team members from a different country or culture and how your own values, ethics, beliefs, faith, cultural conventions, perceptions, expectations, use of language, tone of voice and body language may appear to them
8. Why it is important to allocate work to individuals and/or teams on a fair basis and how to do so effectively
9. Why it is important that individuals and/or teams are briefed on allocated work and the standard or level of expected performance and how to do so effectively
10. The importance of showing individuals and/or teams how their work fits with the vision and objectives of the area and those of the organisation
11. Ways of encouraging individuals and/or teams to ask questions and/or seek clarification in relation to the work which they have been allocated.
12. Effective ways of regularly and fairly monitoring the progress and quality of work of individuals and/or teams against the standards or level of expected performance
13. How to provide prompt and constructive feedback to individuals and/or teams
14. Why it is important to monitor your area for conflict and how to identify the cause(s) of conflict when it occurs and deal with it promptly and effectively
15. How to take account of diversity and inclusion issues when supporting and encouraging individuals and/or teams to complete the work they have been allocated
16. Why it is important to identify unacceptable or poor performance by individuals and/or teams and how to discuss the cause(s) and agree ways of improving performance with them
17. The type of problems and unforeseen events that may occur and how to support individuals and/or teams in dealing with them
18. The additional support and/or resources which individuals and/or teams might require to help them complete their work and how to assist in providing this
19. How to select and successfully apply different methods for encouraging, motivating and supporting individuals and/or teams to complete the work they have been allocated, improve their performance and for recognising their achievements
20. How to log information on the ongoing performance of individuals and/or teams and use this information for formal performance appraisal purposes
21. The importance of reviewing and updating plans of work for your area in the light of developments, how to reallocate work and resources and clearly communicate the changes to those affected

Industry/sector specific knowledge and understanding

22. Industry/sector requirements for the development or maintenance of knowledge, understanding and skills
23. Industry/sector specific legislation, regulations, guidelines, codes of practice relating to carrying out work

Context specific knowledge and understanding

24. The individuals and/or teams in your area of responsibility

25. The vision and objectives for your area of responsibility
26. The vision and objectives of the overall organisation
27. The work required in your area of responsibility
28. The available resources for undertaking the required work
29. The plan of work for your area of responsibility
30. The organisation's written health and safety policy statement and associated information and requirements
31. Your organisation's policy and procedures in terms of personal development
32. Organisational standards or level of expected performance
33. Organisational policies and procedures for dealing with poor performance
34. Organisational grievance and disciplinary policies and procedures
35. Organisational performance appraisal systems

PERFORMANCE OBJECTIVES

Outcomes of effective performance

You must be able to do the following:

a. Confirm the work required in your area of responsibility with your manager and seek clarification, where necessary, on any outstanding points and issues.
b. Plan how the work will be undertaken, seeking views from people in your area of responsibility, identifying any priorities or critical activities and making best use of the available resources.
c. Ensure that work is allocated to individuals and/or teams on a fair basis taking account of skills, knowledge and understanding, experience and workloads and the opportunity for development.
d. Ensure that individuals and/or teams are briefed on allocated work, showing how it fits with the vision and objectives for the area and the overall organisation, and the standard or level of expected performance.
e. Recognise and seek to find out about differences in expectations and working methods of any team members from a different country or culture and promote ways of working that take account of their expectations and maximise productivity.
f. Encourage individuals and/or team members to ask questions, make suggestions and seek clarification in relation to allocated work.
g. Monitor the progress and quality of the work of individuals and/or teams on a regular and fair basis against the standard or level of expected performance and provide prompt and constructive feedback.
h. Support individuals and/or teams in identifying and dealing with problems and unforeseen events.
i. Motivate individual and/or teams to complete the work they have been allocated and provide, where requested and where possible, any additional support and/or resources to help completion.
j. Monitor your area for conflict, identifying the cause(s) when it occurs and dealing with it promptly and effectively.
k. Identify unacceptable or poor performance, discuss the cause(s) and agree ways of improving performance with individuals and/or teams.
l. Recognise successful completion of significant pieces of work or work activities by individuals and/or teams.
m. Use information collected on the performance of individuals and/or teams in any formal appraisals of performance.

n. Review and update plans of work for your area, clearly communicating any changes to those affected.

Behaviours which underpin effective performance

o. You recognise changes in circumstances promptly and adjust plans and activities accordingly.
p. You prioritise objectives and plan work to make best use of time and resources.
q. You make time available to support others.
r. You take personal responsibility for making things happen.
s. You show an awareness of your own values, motivations and emotions.
t. You show integrity, fairness and consistency in decision-making.
u. You clearly agree what is expected of others and hold them to account.
v. You seek to understand people's needs and motivations.
w. You take pride in delivering high quality work.
x. You are vigilant for possible risks and hazards.
y. You encourage and support others to make the best use of their abilities.
z. You use a range of leadership styles appropriate to different people and situations.

NOS G12 – Developing Staff
(Imported MSC Unit D8)

UNIT OVERVIEW

What is the unit about?

This unit is about helping members of your team address problems affecting their performance. These may be work-related problems or problems arising from their personal circumstances. The unit involves identifying problems affecting people's performance and discussing these in a timely way with the team members concerned to help them find a suitable solution to their problem. Sometimes you may need to refer the team member to specialist support services.

Who is the unit for?

The unit is recommended particularly for first line managers and middle managers.

Skills

Listed below are the main generic 'skills' which need to be applied in helping team members address problems affecting their performance. These skills are explicit/implicit in the detailed content of the unit and are listed here as additional information.

- Acting assertively
- Communicating
- Consulting
- Decision-making
- Empathising
- Information management
- Managing conflict
- Monitoring
- Problem solving
- Providing feedback
- Reviewing
- Setting objectives
- Team building
- Valuing and supporting others

ESSENTIAL KNOWLEDGE

You need to know and understand the following:

General knowledge and understanding

1. The importance in giving team members opportunities to approach you with problems affecting their performance.
2. How to encourage team members to approach you with problems affecting their performance.
3. The importance of identifying performance issues and bringing these promptly to the attention of the team members concerned.

4. The importance of discussing problems with team members at a time and place appropriate to the type, seriousness and complexity of the problem.
5. How to gather and check the information you need to identify the problem and its cause.
6. The importance of identifying the problem accurately.
7. The range of alternative courses of action to deal with the problem.
8. The importance of discussing and agreeing with the team member a timely and effective way of dealing with the problem.
9. When to refer the team member to support services or specialists.
10. The importance of keeping a confidential record of your discussions with team members about problems affecting their performance, and how to do so.
11. The importance of ensuring your actions are in line with your organisation's policies for managing people and their performance.

Industry/sector specific knowledge and understanding

12. Industry/sector requirements for helping team members address problems affecting their performance.

PERFORMANCE CRITERIA

Outcomes of effective performance

You must be able to do the following:

a. Give team members opportunities to approach you with problems affecting their performance.
b. Identify performance issues and bring these promptly to the attention of the team members concerned.
c. Discuss problems with team members at a time and place appropriate to the type, seriousness and complexity of the problem.
d. Gather and check information to accurately identify the problem and its cause.
e. Discuss the range of alternative courses of action and agree with the team member a timely and effective way of dealing with the problem.
f. Refer the team member to support services or specialists, where necessary.
g. Keep a confidential record of your discussions with team members about problems affecting their performance.
h. Ensure your actions are in line with your organisation's policies for managing people.

Behaviours which underpin effective performance

i. You find practical ways to overcome barriers.
j. You show empathy with others' needs, feelings and motivations and take an active interest in their concerns.
k. You make time available to support others.
l. You comply with, and ensure others comply with, legal requirements, industry regulations, organisational policies and professional codes.
m. You show integrity, fairness and consistency in decision-making.
n. You confront performance issues and resolve them directly with the people involved.
o. You keep confidential information secure.
p. You check the validity and reliability of information.
q. You identify the implications or consequences of a situation.
r. You take timely decisions that are realistic for the situation.

Context specific knowledge and understanding

s. The types of problems that your team members may encounter which can affect their performance.
t. Your role, responsibilities and limits of authority when dealing with team members' problems.
u. The range of support services or specialists that exist inside and outside your organisation.
v. Your organisation's policies for managing people and their performance.

NOS G13 – Business Management
(Imported MSC Unit F3)

UNIT OVERVIEW

What is the unit about?

This unit is about managing business processes to make sure the organisation delivers outputs that meet customers' needs and stakeholders' needs, and organisational and legal requirements.

Who is the unit for?

The unit is recommended for middle managers.

Skills

Listed below are the main generic 'skills' which need to be applied in managing business processes. These skills are explicit/implicit in the detailed content of the unit and are listed here as additional information.

- Communicating
- Information management
- Analysing
- Assessing
- Presenting information
- Influencing
- Persuading
- Negotiating
- Problem solving
- Prioritising
- Thinking systematically
- Thinking creatively
- Reviewing

KNOWLEDGE AND UNDERSTANDING

You need to know and understand the following:

General knowledge and understanding

1. Principles and models of effective process management.
2. How to define business processes
3. Types of business process measures and how to assess their suitability
4. How to ensure processes and resources are sustainable and effective in their use, and the importance of doing so
5. The difference between process outputs and outcomes
6. How to assess process changes for risk and reward against their potential investment cost
7. How to carry out cost and benefit analysis
8. Types of analytical and problem-solving tools that you can use when developing business processes

9. How to measure the effect of changes in the business process

Industry/sector specific knowledge and understanding

10. The sector and market in which your organisation works
11. Relevant sector trends, developments and competitor performance that affect your business processes

Context specific knowledge and understanding

12. Your organisation's aims and goals
13. Your organisation's structure, values and culture
14. How your organisation adds value through delivering its products, services and processes
15. The needs of your actual and potential customers and other key stakeholders
16. Your organisation's products, services and processes and the interdependencies between them
17. Measures of process performance that are relevant to your organisation

PERFORMANCE OBJECTIVES

Outcomes of effective performance

You must be able to do the following:

a. Design processes that deliver outcomes based on organisational goals and aims.
b. Ensure processes and resources are sustainable and effective in their use.
c. Identify and provide the resources you need.
d. Take account of influences that may affect and shape how processes work.
e. Link processes so that they interact across the organisation to form a complete system.
f. Provide information and support for staff and other stakeholders involved.
g. Define process responsibilities.
h. Develop process measures that are affordable and provide enough information for people to decide how to manage the process.
i. Establish and use effective methods to review and improve the process.

Behaviours which underpin effective performance

j. You keep people informed of plans and developments.
k. You clearly agree what is expected of others and hold them to account.
l. You take repeated or different actions to overcome obstacles and respond positively and creatively to setbacks.
m. You comply with, and ensure others comply with, legal requirements, industry regulations, organisational policies and professional codes.
n. You monitor the quality of work and progress against plans and take appropriate corrective action, where necessary.
o. You focus personal attention on specific details that are critical to achieving successful results.
p. You identify systemic issues and trends and recognise their impact upon current and future work.
q. You take opportunities when they arise to achieve longer-term aims.

NOS 21 - Deliver Reliable Customer Services in the Automotive Sector
(Imported ICS Unit 21)

UNIT OVERVIEW

This unit sits within the Customer Service Theme of Delivery. This Theme covers Customer Service behaviours and processes that have most effect on the customer experience during Customer Service delivery

This Unit is all about how you deliver consistent and reliable service to customers. As well as being good with people, you need to work with your organisation's service systems to meet and, wherever possible, exceed customer expectations.

In your job there will be many examples of how you combine your approach and behaviour with your organisation's systems. You need to prepare for each transaction with a customer, deal with different types of customers in different circumstances and check that what you have done has met customer expectations.

To meet this standard you have to deliver excellent customer service over and over again

KNOWLEDGE AND UNDERSTANDING

To be competent at delivering reliable customer service you must know and understand:

1. your organisation's procedures and systems for delivering customer service
2. methods or systems for measuring an organisation's effectiveness in delivering customer service
3. your organisation's procedures and systems for checking service delivery
4. your organisation's requirements for health and safety in your area of work

PERFORMANCE OBJECTIVES

When you deliver reliable customer service you must consistently:

1 Prepare to deal with your customers

1.1 keep your knowledge of your organisation's services or products up-to-date
1.2 ensure that the area you work in is tidy, safe and organised efficiently
1.3 prepare and arrange everything you need to deal with your customers before your shift or period of work commences

2 Give consistent service to customers

2.1 make realistic promises to your customers about the delivery of services or products
2.2 ensure that your promises balance the needs of your customer and your organisation
2.3 keep your promises to your customers
2.4 inform your customers if you cannot keep your promises due to unforeseen circumstances
2.5 recognise when your customer's needs or expectations have changed and adapt your service to meet their new requirements
2.6 keep your customer informed if delivery of the service needs to involve passing them on to another person or organisation

3 Check customer service delivery

3.1 check that the service you have given meets your customer's needs and expectations
3.2 identify when you could have given better service to your customer and how your service could have been improved
3.3 share information with colleagues and service partners to maintain and improve your standards of service delivery.

NOS 37 - Support Customer Service Improvements in the Automotive Sector
(Imported ICS Unit 37)

UNIT OVERVIEW

This unit sits within the Customer Service Theme of Development and Improvement. This Theme covers activities and approaches that play a vital part in customer service by seeking and implementing improvements and developments

Organisations change the way they deliver service to their customers because customer expectations rise and because other organisations improve the services they offer. Often the most important ideas about how to improve customer service come from people dealing directly with customers.

Your job involves delivering customer service. If your organisation has decided to make changes, it is your job to support them and to present them positively to your customers. Also, by listening to customer comments you may have your own ideas about how the service you deliver could be improved.

This unit is all about how you provide support for changes that your organisation has introduced. In addition, it covers how you present your own ideas for improvements to someone in your organisation who can authorise trying out the change.

KNOWLEDGE AND UNDERSTANDING

To be competent at supporting customer service improvements you need to know and understand:

1. how customer experience is influenced by the way service is delivered
2. how customer feedback is obtained
3. how to work with others to identify and support change in the way service is delivered
4. why it is important to give a positive impression to your customer about the changes made by your organisation even if you disagree with them

PERFORMANCE OBJECTIVES

To support customer service improvements you must consistently:

1 Use feedback to identify potential customer service improvements

1.1 gather informal feedback from your customers
1.2 use customer feedback procedures to collect information from your customers
1.3 use the information from your customers to develop a better understanding of their customer service experience
1.4 identify ways the service you give could be improved based on information you have gathered
1.5 share your ideas for improving customer service with colleagues

2 Implement changes in customer service

2.1 identify a possible change that could be made to improve customer service
2.2 present your idea for improving customer service to a colleague with the appropriate authority to approve the change
2.3 carry out changes to customer service procedures based on your own idea or proposed by your organisation
2.4 keep your customers informed of changes to customer service
2.5 give customers a positive impression of changes that have been made
2.6 work positively with others to support customer service changes

3 Assist with the evaluation of changes in customer service

3.1 discuss with others how changes to customer service are working
3.2 work with others to identify any negative effects of changes and how these can be avoided

NOS BB01 - Remove and fit basic Commercial Motor Vehicle Mechanical, Electrical and Trim (MET) Components

UNIT OVERVIEW

This unit is about the straightforward removal and fitting of basic mechanical, electrical and trim (MET) components to commercial vehicles. It is also about checking the operation of the components fitted.

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard.

1. Basic MET components are

a. bumpers
b. headlamp units
c. road wheels
d. batteries
e. interior trim components
f. exterior trim components

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the removal and fitting of **basic MET components**
2. your workplace procedures for:
   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records
3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting **basic MET components**

Removing and fitting basic MET components

6. find, interpret and use sources of information applicable to the removal and fitting of **basic MET components**
7. how to select, check and use all the tools and equipment required to remove and fit **basic MET components**
8. the procedures for removing and fitting **basic MET components**
9. the methods of storing removed parts and the importance of storing them correctly
10. the different types of fastenings and the reasons for their use
11. the need for correct alignment of components and the methods used to achieve this

12. the types of quality checks that can be used to ensure correct alignment and operation of components to manufacturer's specification and their purpose

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when removing and fitting **basic MET components**
b. protect the vehicle and its contents effectively when removing and fitting **basic MET components**
c. select and use the correct tools and equipment for the components you are going to remove or fit
d. ensure that the tools and equipment you require are in a safe working condition
e. remove and fit **basic MET components** following:
   - removal and fitting procedures
   - manufacturers' instructions
   - your workplace procedures
   - health, safety and legal requirements
f. avoid damaging other components and units on the vehicle
g. store all removed components safely in the correct location
h. check that the components you have fitted operate correctly following the manufacturer's specification
i. report any additional faults you find during the course of your work to the relevant person(s) promptly
j. report any delays in completing your work to the relevant person(s) promptly
k. remove and fit **basic MET components** within the agreed timescale
l. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BB02 - Remove and fit non-permanently Fixed Commercial Motor Vehicle Body Panels and Chassis Cab Components

UNIT OVERVIEW

This unit is about removing and fitting non permanently fixed panels and associated chassis cab components such as bumpers, front panels, door panels, steps and air management systems on commercial vehicles.

Note: panels may contain safety related components

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard.

1. Examples of panels and associated chassis cab components covered in this unit are

a. bumper
b. front panel
c. door panel
d. step
e. air management system

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the removal and fitting of non permanently fixed body panels
2. your workplace procedures for:
   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records
3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after removing and fitting activities
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when removing and fitting non permanently fixed body panels and associated chassis cab components

Removing and fitting non permanently fixed body panels

6. how to find, interpret and use sources of information applicable to the removal and fitting of basic **non permanently fixed body panels**

7. how to select, check and use all the tools and equipment required to remove and fit basic **non permanently fixed body panels**
8. the different types of mechanical fixings for **non permanently fixed body panels** and when and why they should be used
9. the correct procedures and processes for removing and fitting **non permanently fixed body panels**
10. the need for correct alignment of panels and the methods used to achieve this
11. the types of quality control checks that can be used to ensure correct alignment and contour of panels and operation of components to manufacturer's specification
12. the methods of storing removed components and the importance of storing them correctly and in accordance with legal requirements

PERFORMANCE OBJECTIVES

To be competent you must:

a use the appropriate personal protective equipment when removing and fitting **non permanently fixed body panels**

b protect the vehicle, its contents and systems effectively when removing and fitting **non permanently fixed body panels**

c select and use the correct **tools and equipment** for the components you are going to remove or fit

d ensure that the **tools and equipment** you require are in a safe working condition

e remove and fit **non permanently fixed body panels** following:
- manufacturers' methods/instructions
- recognised researched repair methods
- your workplace procedures
- health, safety and legal requirements

f avoid damaging other components, units and panels on the vehicle

g store all removed components safely in the correct location and in accordance with relevant legislation.

h realign the components you have fitted correctly in a way which regains their original manufactured tolerance.

i check that the components you have fitted operate correctly following the manufacturer's specification

j report any faults you notice during the course of your work to the relevant person(s) promptly

k report any delays in completing your work to the relevant person(s) promptly

l complete all activities within the agreed timescale

m complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BB03 - Routine Assembly of Commercial Motor Vehicle Body Components or Parts

UNIT OVERVIEW

This unit is about the routine assembly of non-complex vehicle body parts and components required in the process of commercial vehicle body building where the component or part is quickly assembled, positioned and installed. The assembly methods used are pre-determined either by duplicating the original method or by following written or oral instructions and typically will not involve using more than two different joining techniques.

SCOPE

1. Assembly methods and techniques to be used

Undertake routine assembly techniques to include as appropriate:

- Fasteners and retainers
- Adhesives
- Gaskets (e.g. Indirect glazing)
- Lifting and supporting equipment
- Manual Lifting and carrying
- Positioning and securing

2. Type of parts and components used

Undertake routine assembly activities related to commercial vehicles covering as appropriate:

- Exterior claddings
- Interior claddings
- Frame and structural components
- Interior trim
- Exterior trim
- Body furniture and hardware
- Glazing
- Door units
- Mechanical components
- Electrical components

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the relevant safe working procedures covered by:

    - HASWA

- Organisation's health and safety policy and procedures
- COSHH regulations
- PPE regulations
- Tools and equipment instructions and safety guidance for their use, maintenance and storage.

Assembly drawings and related specifications

2. how to find, interpret and use sources of relevant information to assist in determining the correct assembly techniques to be used, including as appropriate company procedures, assembly and detail drawings, data sheets, specifications, inspection sheets, vehicle records, workshop manuals, manufacturer's manuals and bulletins, wiring circuits and diagrams, repair schedules and insurance assessor' reports.

Assembly methods and techniques

3. the assembly sequences used, for example, riveting roof panels and fitting glazing units.
4. the need for adherence to the assembly sequence to ensure the work activity can be completed without hindrance
5. the need for assembling components temporarily, including, checking alignment, profile, dimensions, correct operation and to allow other work to be carried out without hindrance.

Quality control procedures and recognition of assembly defects

6. the methods used to check compliance with specification, including checks for correct operation, accuracy, alignment and profile, and security of components/parts.

Handling equipment and procedures

7. the methods used to support large, heavy and fragile materials during the assembly process, including working at heights.

Preparation methods and techniques

8. the preparation methods required for the assembly methods that you use, for example, substrate preparation when adhesive bonding.

Tool and equipment care and control procedures

9. how to select, check and use all the tools and equipment required for routine assembly of vehicle body parts and components and to know the control procedures for reporting any defects.

Reporting lines and procedures

10. the extent of your own responsibility and to whom you should report if you have problems that you cannot solve.
11. who to refer to for the assembly tools and equipment that you are not responsible for maintaining.

Performance Objectives

To be competent you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Follow the relevant instructions, assembly drawings and any other specifications
c. Ensure that the specified components are available and that they are in a usable condition
d. Use the appropriate methods and techniques to assemble the components in their correct positions
e. Secure the components using the specified connectors and securing devices
f. Check the completed assembly to ensure that all operations have been completed and the finished assembly meets the required specification
g. Deal promptly and effectively with problems within your control and report those that cannot be solved.

NOS BB04 - Set-out and Assemble Commercial Motor Vehicle Body Components or Parts

UNIT OVERVIEW

This unit is about setting out and assembly of commercial vehicle body parts and components as part of a complex/specialist build, modification or conversion. Selection of the most efficient and effective assembly method to use considering build factors and typically may involve more than two different joining techniques where the materials/components to be assembled may be non-standard, difficult to obtain or expensive.

The extent of responsibility requires work to a specification agreed with your supervisor. If, in the course of the work activity, this specification requires changing or modifying it is expected that you would use your knowledge, skills and experience to initiate an alternative route without compromising the quality of the assembly.

SCOPE

1. Assembly methods and techniques to be used

Undertake routine assembly techniques to include as appropriate:

- Fasteners and retainers
- Adhesives
- Gaskets (e.g. Indirect glazing)
- Lifting and supporting equipment
- Manual Lifting and carrying
- Positioning and securing
- Setting out to include alignment and dimensional accuracy

2. Type of parts and components used

Undertake assembly activities related to commercial vehicles covering as appropriate:

- Exterior claddings
- Interior claddings
- Frame and structural components
- Interior trim
- Exterior trim
- Body furniture and hardware
- Glazing
- Door units
- Mechanical components
- Electrical components

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the relevant safe working procedures covered by:
   - HASWA
   - The organisation's health and safety policy and procedures
   - COSHH regulations
   - PPE regulations
   - Tools and equipment instructions and safety guidance for their use, maintenance and storage.

Assembly drawings and related specifications

2. how to find, interpret and use sources of relevant information to assist in determining the correct assembly techniques to be used, including as appropriate company procedures, assembly and detail drawings, data sheets, specifications, inspection sheets, vehicle records, workshop manuals, manufacturer's manuals and bulletins, wiring circuits and diagrams, repair schedules and insurance assessor' reports.

Assembly methods and techniques

3. the assembly sequences used, for example, riveting roof panels and fitting glazing units.

4. the need for adherence to the assembly sequence to ensure the work activity can be completed without hindrance and/or modified to cater for contingencies

5. the need for assembling components temporarily, including, checking alignment, profile, dimensions, correct operation and to allow other work to be carried.

6. the conflicting and supporting variables which determine the choice of assembly method used, for example, tolerance, quality, customer requirements, the materials being joined, costs and timescales.

Quality control procedures and recognition of assembly defects

7. the methods used to check compliance with specification, including checks for correct operation, accuracy, alignment and profile, and security of components/parts.

Handling equipment and procedures

8. the methods used to support large, heavy and fragile materials during the assembly process, including working at heights.

Preparation methods and techniques

9. the preparation methods required for the assembly methods that you use, for example, substrate preparation when adhesive bonding.

Tool and equipment care and control procedures

10. how to select, check and use all the tools and equipment required for the assembly of vehicle body parts and components and to know the control procedures for reporting any defects.

Reporting lines and procedures

11. the extent of your own responsibility and to whom you should report if you have problems that you cannot solve.

12. the importance of reporting the progress and completion of the build including the provision of information on the parts used, follow up work and potential problems.

13. to whom to refer for the assembly tools and equipment that you are not responsible for maintaining.

Performance Objectives

To be competent you must:

a. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. Follow the relevant instructions, assembly drawings and any other specifications
c. Ensure that the specified components are available and that they are in a usable condition
d. Use the appropriate methods and techniques to assemble the components in their correct positions
e. Secure the components using the specified connectors and securing devices
f. Check the completed assembly to ensure that all operations have been completed and the finished assembly meets the required specification
g. Deal promptly and effectively with problems within your control and report those that cannot be solved.

NOS BB 05 – Non-complex Fabrication/forming Techniques for Motor Vehicles

UNIT OVERVIEW

This unit is about non-complex fabrication/forming techniques used in the process of commercial vehicle body building.

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the relevant safe working procedures covered by:
   - HASWA
   - The organisation's health and safety policy and procedures
   - COSHH regulations
   - PPE regulations
   - Tools and equipment instructions and safety guidance for their use, maintenance and storage.
2. how to find, interpret and use sources of relevant information to establish the fabrication/forming method and work sequence for a range of vehicle body work activities, including as appropriate detail drawings and diagrams, workshop manuals, manufacturer's manuals and data, and company procedures.
3. the advantages and limitations of the materials used in the fabrication/forming of vehicle body panels and components including aluminium and its alloys, carbon and stainless steels, GRP, timber and timber composites and trimming materials.
4. the techniques for cutting materials prior to and during the fabrication/forming of non-complex body panels and components.
5. the techniques for fabricating/forming non-complex body panels and components.
6. how to select the correct tools and equipment used to cut materials prior to and during the fabrication/forming of non-complex body panels and components including the different types of guillotines, saws, shears, drills, snips, nibblers, punches and thermal cutting equipment.
7. how to select the correct tools and equipment used to fabricate/form vehicle body panels and components including the different types of bending rolls, presses and folders, hand forming tools, hammers, mallets, dollies and spoons.
8. the factors which influence the fabrication/forming sequence of non-complex body panels and components including material properties and form, curing time, equipment capability, capacity and availability, build sequence and designing against corrosion.
9. the factors which determine the acceptable tolerance of fabricated/formed vehicle body panels and components e.g. quality standards, manufacturer's warranties, equipment capabilities and capacities, material properties and form, critical and non-critical dimensions, function of body panel or component.
10. the purpose and applications of fabrication/forming and production aids including jigs, fixtures, farmers, stops, fences, guides, templates and patterns.
11. how to calculate the blank size of non-complex fabricated body panels and components including bending, folding, rolling and cutting allowances.
12. how to calculate the material requirements of non-complex formed body panels and components including bending, folding, rolling and cutting allowances.

13. the methods and tests used to check fabricated/formed body panels and components for compliance including visual, measurement, operational and performance checks.
14. the procedures for reporting non-compliance of fabricated/formed body panels and components.

PERFORMANCE CRITERIA

To be competent you must:

a. wear suitable personal protective equipment throughout all fabrication/forming activities.
b. support your fabrication/forming activities by reviewing
   - vehicle technical data, drawing and diagrams
   - legal requirements.
c. select, prepare and use correctly all the tools and **equipment** required following manufacturers' instructions.
d. carry out all fabrication/forming activities following;
   - manufacturers' data and instructions
   - your workplace manuals and procedures
   - health and safety requirements.
e. you work in a way which minimises the risk of:
   - damage to other vehicle systems
   - damage to other vehicle components and units
   - contact with leakage
   - contact with hazardous substances.
f. ensure fabricated/formed body panels and components conform to acceptable tolerances for the vehicle specification, quality standards, manufacturer's warranties.
g. use suitable **testing methods** to evaluate the performance of fabricated/formed body panels and components for compliance to vehicle specification and legal requirements.
h. report any non-compliance of fabricated/formed body panels and components to the relevant person(s) promptly and in accordance with workplace procedures.
i. complete all fabrication/forming activities within the agreed timescale.
j. report any expected delays in completion to the relevant person(s) promptly

NOS BB06 – Complex fabrication/forming techniques for Motor Vehicles

UNIT OVERVIEW

This unit is about complex fabrication/forming techniques used in the process of commercial vehicle body building.

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the relevant safe working procedures covered by:
   - HASWA
   - The organisation's health and safety policy and procedures
   - COSHH regulations
   - PPE regulations
   - Tools and equipment instructions and safety guidance for their use, maintenance and storage.
2. how to select fabrication/forming and cutting methods for vehicle body panels and components with reference to design specification and geometry of panel or component, materials and material form, equipment availability, capacity and capability, stress raising features, strength required, fabrication/forming sequence, tolerance, quantity, customer requirements, legislation, manufacturer's warranties, maintenance requirements, company quality standards and costs.
3. how to compare and select suitable materials for the fabrication/forming of vehicle body panel and components.
4. how to interpret and use the information sources available to establish the cutting and fabrication/forming method and work sequence for a range of vehicle body work activities, including drawings and diagrams, workshop manuals, manufacturer's data and workplace procedures.
5. the planning procedures for a range of complex fabricating/forming activities, considering the following:
   - materials used
   - materials and equipment availability, capacity and capability
   - forming sequence
   - standards and cost
6. the factors which determine the viability of using fabrication/forming and cutting aids such as jigs, fixtures, formers, stops, fences, guides, patterns and templates for the fabrication/forming and cutting of vehicle body panels and components.
7. the factors related to the design of fabrication/forming and cutting aids.
8. the effective and efficient techniques for the cutting and fabrication/forming of complex body panels and components.
9. the stages in producing fabricated/formed body panels and components for new, converted or modified vehicle bodywork.
10. the critical stages for checking compliance in the cutting and fabrication/forming sequence.
11. the methods and tests used to check cut and fabricated/formed body panels and components for compliance including visual and tactile checks, measurement, operational and performance checks.

12. how to use calculations to determine the blank size of complex fabricated/formed body panels and components, including bending, folding, rolling and cutting allowances.
13. how to use calculations to establish the optimum cutter size and pitch, feed rate, cutting speed and cutter pitch mark for timber and timber composite materials using a range of woodworking machines, to include bandsaw, tablesaw, radial arm saw, pullover/crosscut saw, planer thicknesser and router.

PERFORMANCE CRITERIA

To be competent you must:

a. wear suitable personal protective equipment throughout all fabrication/forming activities.
b. support your fabrication/forming activities by reviewing
   - vehicle technical data, drawing and diagrams
   - legal requirements.
c. select, prepare and use correctly all the tools and **equipment** required following manufacturers' instructions.
d. carry out all fabrication/forming activities following;
   - manufacturers' data and instructions
   - your workplace manuals and procedures
   - health and safety requirements.
e. you work in a way which minimises the risk of:
   - damage to other vehicle systems
   - damage to other vehicle components and units
   - contact with leakage
   - contact with hazardous substances.
f. ensure fabricated/formed body panels and components conform to acceptable tolerances for the vehicle specification, quality standards, manufacturer's warranties.
g. use suitable **testing methods** to evaluate the performance of fabricated/formed body panels and components for compliance to vehicle specification and legal requirements.
h. report any non-compliance of fabricated/formed body panels and components to the relevant person(s) promptly and in accordance with workplace procedures.
i. complete all fabrication/forming activities within the agreed timescale.
l. report any expected delays in completion to the relevant person(s) promptly

NOS BB07 – Install Motor Vehicle Ancillary Units and Components

UNIT SUMMARY

This unit identifies the competencies needed to install a range of units and components on commercial vehicles in accordance with approved procedures to organisational and manufacturers' standards. It requires the knowledge and understanding to enable application of installation techniques possible given the constraints that may apply, while ensuring awareness of the regulatory policies and procedures that may be involved. Electrical and electronic knowledge relating to the methods employed to plan and prepare the installation to the required specification.

The extent of responsibility requires work to an agreed specification. If, in the course of the work activity, this specification requires changing or modifying it is expected that you would use your knowledge, skills and experience to initiate an alternative route without compromising the quality of the assembly.

SCOPE

1. Units/Components to be installed

Undertake the installation of ancillary units and components in commercial vehicles, including as appropriate:

- Security cameras
- Tail-lift
- Cranes
- Drawbars
- PTO (Power Take-off)
- Air management systems
- Sleeper pods

ESSENTIAL KNOWLEDGE

You must know and understand:

Relevant health and safety legislation, regulations and safe working procedures

1. the relevant safe working procedures covered by:

    - HASWA
    - Organisational health and safety policy and procedures
    - COSHH regulations
    - PPE regulations
    - Tools and equipment instructions and safety guidance for their use, maintenance and storage.

Engineering specifications

2. the type of constraints which influence the installation plan, including costs, availability of materials and equipment, legislation and warranty.
3. the sourcing and use of relevant information for planning and progressing the work including as appropriate:
    - data sheets
    - specifications
    - inspection sheets
    - vehicle records
    - workshop manuals and procedures
    - manufacturers' instructions
    - diagnostic reports
    - repair schedules and installation schedules

Installation methods, techniques and procedures

4. the methods, techniques and procedures for installing ancillary units including how to check and commission a completed installation to ensure it meets company and regulatory standards.
5. the methods used to check compliance with specification, including checks for correct operation, accuracy, alignment and profile, and security of components/parts.
6. the basic principles of hydraulics and pneumatics involved in ancillary units

Use of tools and equipment

7. how to select, check and use correctly all the tools and equipment required to install ancillary units and components and to leave them after use in a clean and workable condition
8. the control procedures for reporting defective tools and equipment.

Reporting lines and documentation procedures

9. the importance of reporting the progress and completion of the installation including how different types of installation reports are presented to ensure clarity and accuracy of detail.
10. the extent of your own responsibility and to whom you should report if you have problems that you cannot solve.

PERFORMANCE OBJECTIVES

To be competent you must:

a. work safely at all times, complying with health and safety and other relevant regulations and guidelines
b. follow the relevant installation instructions for the unit/component to be installed
c. carry out the installation within agreed timescale using approved methods and procedures.
d. ensure that the installed component meets the specified operating conditions.
e. ensure the tools and equipment used for the installation are in good working order, are used correctly and properly stored after use.
f. produce accurate and complete records of all installation work carried out.
g. install ancillary units and components within the limits of your responsibility.
h. deal promptly and effectively with problems within your control and report those that cannot be solved to the appropriate person.

NOS BB08 – Conduct Pre and Post Work Motor Vehicle Inspections for Body Building Activities

UNIT OVERVIEW

This unit is about carrying out pre and post work inspections of vehicles using a variety of basic inspection methods and defect recording. The unit requires an understanding of the materials used and building construction techniques used in commercial vehicle body and chassis components.

KEY WORDS AND PHRASES

Agreed timescales:

Examples include: manufacturer's recommended work times, job times set by your company or a job time agreed with a specific customer.

Commercial Vehicles

These are medium and large goods vehicles of 3500kgs gross vehicle mass (GVM) and above.

Sources of technical information:

Examples include inspection schedules, manufacturers' manuals and Trade Association check lists, workplace procedures.

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard

1. **Inspections** are:
   a. pre-work
   b. post work

2. **Test methods** are:
   a. visual
   b. aural
   c. functional

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health and safety legislation and workplace procedures relevant to conducting pre and post work vehicle inspections and personal and vehicle protection.
2. your workplace procedures for:
   - recording pre and post work inspections and any variations from specifications

- the referral of problems
- reporting delays to the completion of work

3. the importance of making accurate records of the results of your inspections and interpreting them correctly.
4. the importance of working to agreed timescales and keeping others informed of progress.
5. the relationship between time and costs.
6. the importance of reporting anticipated delays to the relevant person(s) promptly.

Sources of information

7. how to find, interpret and use recommended sources of information, for example tester's manual, driver's handbook.
8. the importance of using recommended sources of information to assist your inspection of vehicles.

Inspection and fault recording methods and the conduct of Inspections

10. how to follow workplace procedures for the systematic pre and post work inspection of vehicles.
11. how to check the basic operation of vehicle systems and vehicle condition
12. how to compare inspection results against vehicle specifications and legal requirements.
13. how to record faults and inspection results in the format required.

Types of metals, alloys and composites, usage and properties

14. the importance of discussing findings based upon the results of your inspections to the relevant person(s).
15. the different types of materials used within a motor vehicle body and chassis construction along with their properties. Including:-
    - Mild steel
    - Ultra High Strength Steels, UHSS
    - Aluminium Alloys
    - Alloys
    - Stainless Steel
    - Plastics
    - Composites
    - Timber
    - Natural and synthetic rubbers
16. the different body and chassis components that are made using the different materials listed (including advantages and disadvantages)
17. the different body and chassis components that are made using the different materials listed (including advantages and disadvantages)
18. how the type of materials used affects the safety, design, cost and construction of motor vehicle bodies and chassis
19. how different materials used in construction react with each other
20. the importance of cleanliness and avoidance of cross contamination when working with different materials
21. how to recognise the type of material used in the construction of vehicle body and chassis components
22. how to select, check, maintain and set up all of the tools and equipment required to correctly join the different materials used for vehicle body and chassis components
23. future materials for construction of vehicle body and chassis components
24. recycling of vehicle body and chassis components, now and future

Vehicle structure, chassis design and alignment

25. the different type of chassis designs used in commercial vehicles, for example separate, semi-integral and integral structures.
26. the relationship between vehicle structure/chassis design and:
    - strength and weight
    - type of vehicle
    - construction materials
    - maintenance
    - cost
27. how to check a vehicle for correct chassis alignment and how to check sub-assembly
28. how manipulation of the vehicle body and chassis will affect the residual strength
29. the different mixes of composite, all metal and pressed steel, underframe, floor, bodysides, front and rear ends, and roof used in the construction of commercial vehicles.
30. chassis constructional principles with reference to:
    - structural considerations
    - sectional form
    - operational requirements

Body Mounting

31. the procedures in the different methods of body mounting appropriate to the vehicle bodywork of different types of vehicle chassis design e.g. four flexible mounts, two flexible mounts etc.
32. the factors to be taken in to account with regard to the selection of appropriate methods of vehicle body mounting

PERFORMANCE OBJECTIVES

To be competent you must:

a. use suitable personal protective equipment throughout all **inspection** activities.
b. use suitable sources of technical information to support your **inspection** activities.
c. carry out systematic vehicle inspections following:
    - your workplace procedures
    - health and safety requirements.
    - the manufacturer's instructions (if appropriate)
d. ensure your comparison of the vehicle against specification accurately identifies any:
    - differences from the vehicle specification
    - vehicle appearance and condition faults
e. work in a way which minimises the risk of damage to the vehicle and its systems, other people and their property.
f. make suitable recommendations for future action based upon the results of your inspections.
g. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required.
h. complete all inspection activities within the agreed timescale and to specification.
i. report any anticipated delays in completion to the relevant person(s) promptly.

NOS BP19 – Motor Vehicle Body MIG/MAG Welding Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using Mig/Mag welding techniques and procedures.

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard.

1. Examples of PPE for MIG/MAG welding operations includes

a. Face mask with appropriate eye protection
b. Protective / Flame retardant coveralls
c. Protective / Flame retardant gauntlets
d. Steel toe cap boots
e. Appropriate vehicle protection
f. Appropriate protection for others in the workshop
g. Fume mask

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the joining of materials using MIG/MAG welding techniques
2. your workplace procedures for:
   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records
3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials using MIG/MAG welding techniques.
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using MIG/MAG welding techniques.
6. how to find, interpret and use sources of information applicable to the joining of materials using MIG/MAG welding techniques
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using MIG/MAG welding techniques
8. the different types of welding processes, techniques and joints used for the joining of materials when using MIG/MAG welding techniques
9. the correct surface preparation methods to ensure a good MIG/MAG weld is achieved and the reasons why surface preparation is important
10. the faults and defects that can occur when carrying out MIG/MAG welding and the common causes of these faults
11. the need for correct alignment of materials and the methods used to achieve this
12. the types of quality control checks that can be used to ensure correct joining of materials
13. how to inspect and assess MIG/MAG welding in accordance to British Standards
14. when MIG/MAG welding should be used to join materials

15. the advantages of MIG/MAG welding techniques over other welding methods
16. the different types of joint that can be used to join materials using MIG/MAG welding, including:
    - Lap Plug
    - Lap Seam
    - Butt Joint
    - Brace Joint
    - Fillet Joint

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when carrying out MIG/MAG welding operations
b. protect the vehicle and its contents effectively when carrying out MIG/MAG welding operations
c. prepare material and align to enable suitable join to be achieved
d. (Meeting flanges must be treated following manufacturers procedures before joining).
e. Select, set up and use the correct **tools and equipment** for carrying out MIG/MAG welding operations
f. ensure that the **tools, equipment and PPE** you require are in a safe working condition
g. Set up your equipment to carry out MIG/MAG welding operations.
    - Check suitability of gas / filler wire and size for material to be joined
    - Check parameters are set correctly
    - Check consumables are correct
    - Feed rollers and welding tip
h. Carry out MIG/MAG welding operations following:
    - Recognised researched repair methods(see guidance document)
    - test procedures and provide test coupons on equivalent material in accordance with British Standards
    - Manufacturers processes, methods and procedures
    - your workplace procedures
    - health, safety and legal requirements
i. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
j. recognise when your weld is not forming correctly and what action needs to be taken
k. inspect and assess MIG/MAG weld quality in accordance with British Standards and manufacturers specification
l. check integrity of weld and record the type of weld achieved on the appropriate paper work. Test pieces must be recorded and stored.
m. dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable
n. clean and store PPE and equipment in appropriate manner
o. report any additional faults you notice during the course of your work to the relevant person(s) promptly
p. report any delays in completing your work to the relevant person(s) promptly
q. carry out MIG/MAG welding operations within the agreed timescale
r. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP22 – Motor Vehicle Body Aluminium Welding Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using aluminum welding techniques and procedures

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard.

1. Examples of PPE for aluminum welding operations includes

a. Face mask with appropriate eye protection
b. Protective / Flame retardant coveralls
c. Protective / Flame retardant gauntlets
d. Steel toe cap boots
e. Appropriate vehicle protection
f. Appropriate protection for others in the workshop
g. Fume mask

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the joining of materials using aluminium welding operations
2. your workplace procedures for:
   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records
3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials using aluminium welding operations
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using aluminium welding operations
6. how to find, interpret and use sources of information applicable to the joining of materials using aluminium welding operations
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using aluminium welding techniques
8. the different types of welding processes, techniques and joints used for the joining of materials when using aluminium welding operations
9. the correct surface preparation methods to ensure a good aluminum weld is achieved and the reasons why surface preparation is important
10. the faults and defects that can occur when carrying out aluminium welding and the common causes of these faults
11. the need for correct alignment of materials and the methods used to achieve this

12. the types of quality control checks that can be used to ensure correct joining of materials including:
    - dye penetrate
    - crack tests
13. how to inspect and assess aluminium weld quality in accordance to British Standards
14. the different types of joint that can be used to join materials using Aluminium welding, including
    - Lap Plug
    - Lap Seam
    - Butt Joint
    - Brace Joint
    - Fillet Joint
15. when aluminium welding techniques should be used
16. how to ensure cross contamination does not occur and the effect of cross contamination on aluminium

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when carrying out aluminium welding operations
b. protect the vehicle and its contents effectively when carrying out aluminium welding operations
c. prepare material surfaces and align to enable suitable join to be achieved
d. (Meeting flanges must be treated following manufacturers procedures before joining).
e. Select, set up and use the correct **tools and equipment** in order to correctly carry out aluminium welding operations
f. ensure that the **tools, equipment and PPE** you require are in a safe working condition and are correct for the joining operation that you are to be completing
g. Set up your equipment to carry out aluminium welding operations.
    - Check suitability of gas / filler wire and size for material to be joined
    - Check parameters are set correctly
    - Check consumables are correct
    - Feed rollers and welding tip
    - Test kit
h. Carry out aluminium welding operations following:
    - Recognised researched repair methods(see guidance document)
    - test procedures and provide test coupons on equivalent material in accordance with British Standards
    - Manufacturers processes, methods and procedures
    - your workplace procedures
    - health, safety and legal requirements
i. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
j. recognise when your weld is not forming correctly and what action needs to be taken
k. inspect and assess aluminium weld quality in accordance to British Standards including
    - dye penetrate
    - crack testing
l. check integrity of the weld and record the type of weld achieved on the appropriate paper work. Test pieces must be recorded and stored.
m. dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable

n. clean and store PPE and equipment in appropriate manner
o. report any additional faults you notice during the course of your work to the relevant person(s) promptly
p. report any delays in completing your work to the relevant person(s) promptly
q. carry out aluminium welding operations within the agreed timescale
r. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP23 – Motor Vehicle Body TIG Welding Operations

UNIT OVERVIEW

This unit is about joining materials correctly and effectively using TIG welding techniques and procedures

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard.

1. Examples of PPE for TIG welding operations includes

a. Face mask with appropriate eye protection
b. Protective / Flame retardant coveralls
c. Protective / Flame retardant gauntlets
d. Steel toe cap boots
e. Appropriate vehicle protection
f. Appropriate protection for others in the workshop
g. Fume mask

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the joining of materials using TIG welding operations
2. your workplace procedures for:
   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records
3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials using TIG welding operations
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when the joining of materials using TIG welding operations
6. how to find, interpret and use sources of information applicable to the joining of materials using TIG welding operations
7. how to select, check, maintain and set up all of the tools and equipment required to correctly join materials using TIG welding operations
8. the different types of welding processes, techniques and joints used for the joining of materials when using TIG welding operations
9. the correct surface preparation methods to ensure a good TIG weld is achieved
10. the faults and defects that can occur when carrying out TIG welding and the common causes of these faults
11. the need for correct alignment of materials and the methods used to achieve this
12. the types of quality control checks that can be used to ensure correct joining of materials
13. how to inspect and assess TIG welding in accordance to British Standards

14. when TIG welding should be used to join materials
15. the advantages of TIG welding techniques over other welding methods
16. the different types of joint that can be used to join materials using TIG welding

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when carrying out TIG welding operations
b. protect the vehicle and its contents effectively when carrying out T welding operations
c. prepare material and align to enable suitable join to be achieved
d. (Meeting flanges must be treated following manufacturers procedures before joining).
e. Select, set up and use the correct **tools and equipment** in order to correctly carry out TIG welding operations
f. ensure that the **tools, equipment and PPE** you require are in a safe working condition
g. Set up your equipment to carry out TIG welding operations.
   - Check suitability of gas / filler wire and size for material to be joined
   - Check parameters are set correctly
   - Check consumables are correct
h. Carry out TIG welding operations following:
   - Recognised researched repair methods(see guidance document)
   - test procedures and provide test coupons on equivalent material in accordance with British Standards
   - Manufacturers processes, methods and procedures
   - your workplace procedures
   - health, safety and legal requirements
i. avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area
j. recognise when your weld is not forming correctly and what action needs to be taken
k. inspect and assess TIG weld quality in accordance with British Standards and Manufacturers Specification
l. check integrity of the weld and record the type of weld achieved on the appropriate paper work. Test pieces must be recorded and stored.
m. dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable
n. Clean and store PPE and equipment in appropriate manner
o. report any additional faults you notice during the course of your work to the relevant person(s) promptly
p. report any delays in completing your work to the relevant person(s) promptly
q. carry out TIG welding operations within the agreed timescale
r. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP24 – Motor Vehicle Body Mechanical Fastening Operations

UNIT OVERVIEW

This unit is about joining materials effectively using mechanical joining techniques.

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard.

1. **PPE for Mechanical Fastening operations,** including:
   a. face mask with appropriate eye shield
   b. gloves (antivibration gloves if appropriate)
   c. ear defenders
   d. steel toe cap boots
   e. appropriate vehicle protection

2. **Mechanical Joining Operations,** including:
   a. riveting, (single sided, double sided, self piercing)
   b. clinching
   c. bolts and fasteners
   d. screwing, (self threading, self piercing)
   e. hybrid joining, (combinations of techniques listed that may also include adhesives)

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the joining of materials using mechanical joining techniques and processes.
2. your workplace procedures for:
   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records
3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials using mechanical joining techniques.
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when joining of materials using mechanical joining techniques.
6. how to find, interpret and use sources of information applicable to the joining of materials using mechanical joining techniques
7. how to select, check and use all the tools and equipment required to join materials using mechanical joining techniques
8. how to select and use the correct mechanical fastener considering the materials used, strength required, anticipated loading, grip range, maintenance, appearance and cost.
9. the different types of techniques and joints used for the joining of different types of materials when using mechanical joining techniques
10. the faults that can occur when mechanical joining and the causes of these faults

11. the need for correct alignment of materials and the methods used to achieve this
12. the types of quality control checks that can be used to ensure correct joining of materials
13. how to carry out and assess mechanical joining

PERFORMANCE OBJECTIVES

To be competent you must:

a. use the appropriate personal protective equipment when carrying out mechanical joining operations
b. protect the vehicle and its contents effectively when carrying out mechanical joining operations
c. prepare material and align to enable suitable join to be achieved
d. (Meeting flanges must be treated before joining).
e. select and use the correct **tools and equipment** for carrying out mechanical joining operations
f. ensure that the **tools, equipment and PPE** you require are in a safe working condition
g. Set up your equipment to carry out mechanical joining operations.
   - Check suitability of joining technique
   - Check suitability of tooling
   - Check consumables are correct
h. Carry out mechanical joining operations following:
   - Manufacturers processes, methods and procedures
   - your workplace procedures
   - health, safety and legal requirements
i. avoid damaging other components, units and panels on the vehicle
j. recognise when your joint is not forming correctly and what action needs to be taken
k. check integrity of the join.
l. Dress and protect the repaired area to inhibit corrosion where applicable
m. Clean and store PPE and equipment in appropriate manner
n. report any additional faults you notice during the course of your work to the relevant person(s) promptly
o. report any delays in completing your work to the relevant person(s) promptly
p. carry out mechanical joining operations within the agreed timescale
q. complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS BP25 – Motor Vehicle Body Adhesive Bonding Operations

UNIT OVERVIEW

This unit is about joining materials effectively using adhesive bonding processes

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard.

1. Examples of PPE for adhesive bonding processes includes:

a. Face mask/respirator with appropriate eye shield
b. Gloves
c. Safety footwear
d. Appropriate vehicle protection
e. Appropriate protection for others in the workshop

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the health, safety and legal requirements relating to the joining of materials using adhesive processes
2. your workplace procedures for:
   - the referral of problems
   - reporting of delays to the completion of work
   - completion of work records
3. the work that needs to be done and the standard required
4. the requirements for protecting the vehicle and contents from damage before, during and after the joining of materials using adhesive processes
5. the importance of selecting, using and maintaining the appropriate personal protective equipment when joining materials using adhesive processes
6. how to find, interpret and use sources of information applicable to the joining of materials using adhesive processes
7. how to select, check and use all the tools and equipment required to join materials using adhesive processes
8. the different types of techniques and joints used for the joining of materials when using adhesive processes
9. the faults that can occur when carrying and using adhesives and the causes of these faults
10. the need for correct alignment of materials and the methods used to achieve this.
11. the types of quality control checks that can be used to ensure correct joining of materials.
12. how to carry out and assess test coupons
13. the principles of good joint design for the type of adhesive being used.

PERFORMANCE OBJECTIVES

To be competent you must:

a use the appropriate personal protective equipment when carrying out adhesive processes
b protect the vehicle and its contents effectively when carrying out adhesive processes
c prepare material and align to enable suitable join to be achieved. Adjoining edges must be treated before joining.
d select and use the correct **tools and equipment** for carrying out adhesive processes
e ensure that the **tools, equipment and PPE** you require are in a safe working condition
f Set up your equipment to carry out adhesive processes.
g Carry out adhesive processes following:
- recognised researched repair methods
- your workplace procedures
- health, safety and legal requirements

h avoid damaging other components, units and panels on the vehicle
i recognise when your join is not forming correctly and what action needs to be taken
j visually check integrity of the join.
k dress and protect the repaired area to inhibit corrosion where applicable
l clean and store PPE and equipment in appropriate manner
m report any additional faults you notice during the course of your work to the relevant person(s) promptly
n report any delays in completing your work to the relevant person(s) promptly
o carry out adhesive processes within the agreed timescale
p complete work records accurately, in the format required and pass them to the relevant person(s) promptly

NOS AE03BB - Remove and Replace Motor Vehicle Electrical Units and Components

UNIT OVERVIEW

This unit is about removing and replacing units and components previously identified as faulty or damaged or where the customer has requested replacements. It is also about evaluating the performance of replaced units and components.
The units and components concerned are those outside those replaced as part of normal routine vehicle maintenance.

KEY WORDS AND PHRASES

Agreed timescales:

Examples include: manufacturer's recommended work times, job times set by your company or a job time agreed with a customer.

Comfort and convenience systems

Examples are heated seats, electrically adjusted seats, heated screens, electric mirrors, heating, climate control and air conditioning.

Commercial Vehicles

These are medium and large goods vehicles of 3500kgs gross vehicle mass (GVM) and above.

Units and components:

Any unit or component from the electrical systems defined in the Scoping Statement below.

SCOPE OF THIS UNIT:

All of the items listed below form part of this National Occupational Standard

1. **Equipment** is:
   a. hand tools
   b. special workshop tools
   c. general workshop equipment
   d. electrical meters

2. **Testing methods** are:
   a. visual
   b. aural
   c. functional
   d. measurement

3. Electrical units and components are:

a. lighting systems: side marker lights, rear marker lights, front marker lights rear light lamp assemblies (where they can be fitted), reversing bleapers, interior body lights, number plate light.
b. temperature monitoring and instrumentation systems

ESSENTIAL KNOWLEDGE

You need to understand:

Legislative and organisational requirements and procedures

1. the legal requirements relating to the vehicle (including road safety and refrigerant handling requirements).
2. the health and safety legislation and workplace procedures relevant to vehicle body building activities and personal and vehicle protection.
3. your workplace procedures for:
   - recording information
   - the referral of problems
   - reporting delays to the completion of work
4. the importance of documenting removal and replacement information
5. the importance of working to agreed timescales and keeping others informed of progress.
6. the relationship between time and costs.
7. the importance of reporting anticipated delays to the relevant person(s) promptly.

Use of technical information

8. how to find, interpret and use sources of information applicable to **electrical unit and component** removal and replacement.
9. the importance of using the correct sources of technical information
10. the purpose of and how to use identification codes

Equipment

13. how to prepare, test and use all the removal and replacement **equipment** required.

Electrical and electronic principles

14. vehicle earthing principles and earthing methods.
15. electrical and electronic principles associated with electrical systems, including types of sensors and actuators, their application and operation
16. types of circuit protection and why these are necessary.
17. electrical safety procedures.
18. how lighting, warning, charging and starter circuits work.
19. electric symbols, units and terms.
20. electrical/electronic control system principles

Electrical unit and component removal and replacement

21. how to remove and replace **electrical units and components** for the classification of vehicle worked upon.
22. how to test and evaluate the performance of replacement **electrical units and components** and the reassembled system against the vehicle operating specifications and any legal requirements.

23. the relationship between testing methods and the **electrical units and components** replaced – the use of appropriate test methods.
24. the manufacturer's specification for the type and quality of **electrical units and components** to be used.
25. how to work safely avoiding damage to other vehicle systems, components and units and contact with leakage and hazardous substances.

PERFORMANCE OBJECTIVES

To be competent you must:

a. wear suitable personal protective equipment and use vehicle coverings throughout all removal and replacement activities.
b. support your removal and replacement activities by reviewing
   - vehicle technical data
   - removal and replacement procedures
   - legal requirements.
c. prepare, test and use all the **equipment** required following manufacturers' instructions.
d. carry out all removal and replacement activities following;
   - manufacturers' instructions
   - your workplace procedures
   - health and safety requirements.
e. you work in a way which minimises the risk of:
   - damage to other vehicle systems
   - damage to other vehicle components and units
   - contact with leakage
   - contact with hazardous substances.
f. ensure replaced **electrical auxiliary units and components** conform to the vehicle operating specification and any legal requirements.
g. record and report any additional faults you notice during the course of your work promptly.
h. use suitable **testing methods** to evaluate the performance of the reassembled system accurately.
i. ensure the reassembled system performs to the vehicle operating specification and meets any legal requirements prior to return to the customer.
j. ensure your records are accurate, complete and passed to the relevant person(s) promptly in the format required.
k. complete all removal and replacement activities within the agreed timescale.
j. you report any expected delays in completion to the relevant person(s) promptly