

National Occupational Skill Standard (NOSS)

Occupational Title : Auto Painter

Level : 1

Sector : Automobile Engineering

Sub - Sector : Bodyshop

NOSS ID/NSCO ID :

ISCO NO :



Council for Technical Education and Vocational Training

NATIONAL SKILL TESTING BOARD

Madhyapur Thimi-17, Sanothimi, Bhaktapur, Nepal

Developed: 26-03-2021 (13-12-2077)



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4.	Mr. Subodh Kumar Ghimire	Member	Institute of Engineering, Thapathali Campus Thapathali, Kathmandu
5.	Mr. Charan Singh	Member	Man and Machine, Pvt. Ltd., Thapathali, Kathmandu
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DACUM Workshop on 2008 and Curriculum Revised on 2020 (2077)

NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:2



2045

The National Occupational Skill Standard Developed by:

No	Name	Designation	Organization
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Recommended by Automobile Technical Sub Committee: 26 March 2021 (13 Chaitra 2077)

NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:3



2045

1	<p>Occupational Title: Auto Painter Level: 1</p>
2	<p>Job Description: Auto painter L-1, prepares body surface for painting and paints vehicle body.</p>
3	<p>UNITS OF COMPETENCY:</p> <ol style="list-style-type: none"> 1. Prepare body surface for painting. 2. Apply paint on vehicle body. 3. Perform communication. 4. Develop professionalism. <p>*Note: Unit 3 and 4 are not for testing purpose.</p>
4	<p>Qualifying Notes/Prerequisites:</p> <ul style="list-style-type: none"> • Physical Requirements: Sound health • Entry Requirements: As per NSTB rules. <p>Additional Information:</p> <ul style="list-style-type: none"> • Assessment Types: Performance Test only. • Assessment Duration: 4 to 6 Hours (Full Competency Only) • Recommended Group Size: 6 to 8 candidates



5	Unit No: 1 Unit Title: Prepare body surface for painting	Unit code:
	Elements of competency	Performance standards
	1.1 Prepare tools, equipment and materials	1.1.1 Personal protective equipment (PPE) used in accordance with task requirement. 1.1.2 Tools and equipment collected and checked for working condition in accordance with task requirement. 1.1.3 Materials collected and prepared in accordance with task requirements.
	1.2 Remove vehicle body parts	1.2.1 Vehicle inspected for painting work. 1.2.2 Detachable parts and accessories removed from the surface to be painted without damage according to manufacturer's instruction. 1.2.3 Parts placed on designated place with identification tag without damage.
	1.3 Cover non painting area	1.3.1 Area to be painted marked clearly. 1.3.2 Non painting area covered with masking materials and edges secured.
	1.4 Perform buffing on body surface	1.4.1 Vehicle body surface required for buffing identified and marked. 1.4.2 Vehicle body surface buffed without damaging surface. 1.4.3 Surface wiped and dust removed.
	1.5 Perform levelling of body surface	1.5.1 Surface of vehicle washed, wiped and foreign materials removed without damaging surface. 1.5.2 Surface sanded to smoothen uneven and rough surface. 1.5.3 Sanded surface wiped and dust removed. 1.5.4 Body filler mixed to uniform consistency and filler applied evenly on uneven surfaces.
	1.6 Clean work area	1.6.1 Unused materials sealed tightly and stored/stacked at designated place. 1.6.2 Tools and equipment cleaned, maintained, stored and record updated. 1.6.3 Work area cleaned and waste materials disposed in accordance with 3R's principles .



6	<p>Task Performance Requirements (Tools, Equipment and Materials):</p> <ul style="list-style-type: none"> Hand grinder, wire brush, sand paper, sanding machine, hand burner, air compressor, body filler, paint scraper, paint remover, brush, spirit, putty, putty knife, file, steel ruler, marker, chalk, masking tape, masking paper, plastic sheet, pen, paper, register, hammer, wrench, screw driver, pliers, thinner, bucket, vacuum cleaner, air blower, broom, dust bin, dust pan, tack cloth, cloth, first aid kit and PPE.
7	<p>Safety and Hygiene (Occupational Health and Safety):</p> <ul style="list-style-type: none"> Use Personal Protective Equipment (PPE). Safe handling of materials, tools and equipment. Prevent from hazards involved in painting works. Prevent from electrical and chemical hazards. Keep the workplace dry and clean.



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:6



8	Required Knowledge		
	Technical Knowledge	Applied Calculation	Graphical Information
	<ul style="list-style-type: none"> • Tools and equipment <ul style="list-style-type: none"> ○ Types ○ Uses ○ Safe handling • Vehicle body parts/components • Vehicle body parts removing and refitting techniques • Vehicle body <ul style="list-style-type: none"> ○ Introduction ○ Types ○ Materials used in vehicle body • Vehicle body preparation for painting • Masking materials and methods • Buffing • Surface levelling technique and methods <ul style="list-style-type: none"> ○ Grinding ○ Sanding ○ Puttying • Paint removal methods 	<ul style="list-style-type: none"> • Calculate mixing ratio 	<ul style="list-style-type: none"> • Read and interpret manufacturer's instruction



- Scraping techniques
- Sanding
 - Use
 - Importance
 - Types
 - Methods
- Grinding
 - Use
 - Importance
 - Types
 - Methods
- Cleaning/washing
 - Importance
 - Types
 - Methods
- Types and uses of filling materials
- Waste management
- Occupation health and safety rules and regulations
- Importance of first aid kit



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:8



2045

9	Assessment of Competency				
	Unit: 1				
	Unit Title: Prepare body surface for painting				
	Candidate Details			Assessors Detail	
	Candidate's Name:		Assessors' Name		ID/License No:
	Registration Number:		1.		
	Symbol No:		2.		
	Test Centre:	Test Date:	3.		
Element of competency	Performance Standards	Standard Met	Standard Not Met	Evidence Type	Comments
1.1 Prepare tools, equipment and materials	<p>1.1.1 Personal protective equipment (PPE) used in accordance with task requirement.</p> <p>1.1.2 Tools and equipment collected and checked for working condition in accordance with task requirement.</p> <p>1.1.3 Materials collected and prepared in accordance with task requirements.</p>				
1.2 Remove vehicle body parts	<p>1.2.1 Vehicle inspected for painting work.</p> <p>1.2.2 Detachable parts and accessories removed from the surface to be painted without damage according to manufacturer's instruction.</p> <p>1.2.3 Parts placed on designated place with identification tag without damage.</p>				



1.3 Cover non painting area	1.3.1 Area to be painted marked clearly. 1.3.2 Non painting area covered with masking materials and edges secured.				
1.4 Perform buffing on body surface	1.4.1 Vehicle body surface required for buffing identified and marked. 1.4.2 Vehicle body surface buffed without damaging surface. 1.4.3 Surface wiped and dust removed.				
1.5 Perform levelling of body surface	1.5.1 Surface of vehicle washed, wiped and foreign materials removed without damaging surface. 1.5.2 Surface sanded to smoothen uneven and rough surface. 1.5.3 Sanded surface wiped and dust removed. 1.5.4 Body filler mixed to uniform consistency and filler applied evenly on uneven surfaces.				
1.6 Clean work area	1.6.1 Unused materials sealed tightly and stored/stacked at designated place. 1.6.2 Tools and equipment cleaned, maintained, stored and record updated. 1.6.3 Work area cleaned and waste materials disposed in accordance with 3R's principles .				

WT- Written Test

OQ- Oral Question

PT- Practical Test

DO – Direct Observation

SR- Supervisor's report

SN–Simulation

RP- Role Play

PG –Photographs

VD- Video

CT – Certificates

TS – Testimonials (Reward)

PP – Product Produced

CS – Case Study



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:10



Range Statement

Variable	Range
Personal Protective Equipment (PPE)	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Helmet • Mask • Apron • Goggles • Gloves • Safety shoes • Earplug
Detachable parts and accessories	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Head light, side light, back light, • Side mirror • Doors • Antenna • Rear view mirror
Designated place	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Container • Box • Rack • Floor
Masking materials	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Masking paper • Plastic sheet • Masking tape



Foreign materials	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Dust • Dirt • Lubricants • Rust • Paint
3R's principles	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Reduce • Reuse • Recycle



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:12



2045

5	Unit No: 2 Unit Title: Apply paint on vehicle body	Unit code:
	Elements of competency	Performance standards
	2.1 Prepare tools, equipment and materials	<p>2.1.1 Personal protective equipment (PPE) used in accordance with task requirement.</p> <p>2.1.2 Tools and equipment collected and checked for working condition in accordance with task requirement.</p> <p>2.1.3 Materials collected and prepared in accordance with task requirements.</p>
	2.2 Prepare paint surface	<p>2.2.1 Vehicle inspected for painting work.</p> <p>2.2.2 Surface to be painted clearly marked and rest covered with masking materials.</p> <p>2.2.3 Vehicle body surface buffed without damaging surface.</p> <p>2.2.4 Surface of vehicle washed, wiped and foreign materials removed without damaging surface.</p> <p>2.2.5 Surface sanded to smoothened uneven and rough surface.</p> <p>2.2.6 Sanded surface wiped and dust removed.</p> <p>2.2.7 Body filler mixed to cream consistency and filler evenly applied on uneven surfaces.</p>
	2.3 Apply primer	<p>2.3.1 Primer mixed to specified ratio in accordance with manufacturer's specifications and recommendations.</p> <p>2.3.2 Primer loaded not more than marking level without spillage.</p> <p>2.3.3 Spray pattern tested on test panel and adjustments made as per requirement.</p> <p>2.3.4 Primer applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.</p> <p>2.3.5 Surface sanded uniformly after primer dried completely.</p> <p>2.3.6 Sanded surface wiped and dust removed.</p>
	2.4 Apply basecoat paint	<p>2.4.1 Basecoat paint selected as per body color.</p> <p>2.4.2 Color loaded not more than marking level without spillage.</p> <p>2.4.3 Spray pattern tested on test panel and adjustments made as per requirement.</p>



	2.4.4 Basecoat paint applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.
2.5 Apply topcoat paint	<p>2.5.1 Topcoat paint selected as per body color.</p> <p>2.5.2 Topcoat paint mixed to specified ratio in accordance with paint manufacturer's specifications and recommendations.</p> <p>2.5.3 Color loaded not more than marking level without spillage.</p> <p>2.5.4 Spray pattern tested on test panel and adjustments made as per requirement.</p> <p>2.5.5 Topcoat paint applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.</p>
2.6 Apply solid paint	<p>2.6.1 Color selected as per body color.</p> <p>2.6.2 Solid paint mixed to specified ratio in accordance with paint manufacturer's specifications and recommendations.</p> <p>2.6.3 Solid paint loaded not more than marking level without spillage.</p> <p>2.6.4 Spray pattern tested on test panel and adjustments made as per requirement.</p> <p>2.6.5 Solid paint applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.</p>
2.7 Apply polish	<p>2.7.1 Body surface inspected for <i>imperfection</i>.</p> <p>2.7.2 Imperfection area marked for buffing.</p> <p>2.7.3 Polish applied uniformly to achieve required level of finish.</p>
2.8 Clean work area	<p>2.8.1 Masking materials removed as per sequence of layer.</p> <p>2.8.2 Stains of paint removed without scratching body surface.</p> <p>2.8.3 Unused materials sealed tightly and stored/stacked at designated place.</p> <p>2.8.4 Tools and equipment cleaned, maintained, stored and record updated.</p> <p>2.8.5 Work area cleaned and waste disposed in accordance with 3R's principle.</p>



6	<p>Task Performance Requirements (Tools, Equipment and Materials):</p> <ul style="list-style-type: none"> Hand grinder, wire brush, sand paper, sanding machine, hand burner, air compressor, spray gun, hot gun, body filler, paint brush, paint scraper, paint remover, spirit, putty, putty knife, file, steel ruler, marker, chalk, masking tape, masking paper, plastic sheet, pen, paper, register, hammer, wrench, screw driver, pliers, brush, thinner, hardener, polish, paint, primer, rubbing compound, wax, liquid polish, cream polish, buffing pad, polishing pad, weighing machine, paint mixing, ruler, emery paper/cloth, sanding block, sealant gun, jute, bucket, vacuum cleaner, air blower, broom, dust bin, dust pan, tack cloth, cloth, sponge, step ladder, tool box, first aid kit, fire extinguisher and PPE.
7	<p>Safety and Hygiene (Occupational Health and Safety):</p> <ul style="list-style-type: none"> Use Personal Protective Equipment (PPE). Safe handling of materials, tools and equipment. Prevent from hazards involved in painting works. Prevent from electrical and chemical hazards. Keep the workplace dry and clean.



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:15



2045

8	Required Knowledge		
	Technical Knowledge	Applied Calculation	Graphical Information
	<ul style="list-style-type: none"> • Tools and equipment <ul style="list-style-type: none"> ○ Types ○ Uses ○ Safe handling • Vehicle body parts/components • Vehicle body parts removing and refitting techniques • Vehicle body <ul style="list-style-type: none"> ○ Introduction ○ Types ○ Materials used in vehicle body • Vehicle body preparation for painting • Buffing • Grinding • Sanding • Puttying • Paint removal methods • Scraping techniques • Measurement unit 	<ul style="list-style-type: none"> • Calculate mixing ratio • Convert imperial unit to metric unit and vice versa 	<ul style="list-style-type: none"> • Read and interpret manufacturer's instruction • Read and interpret color mixing chart • Read and interpret data book



- Vehicle paint
 - Introduction
 - Types
 - Quality
 - Use
 - Paint preparation (Mixing, dilution)
 - Process of paint application
 - Paint application technique and methods
 - Drying time
- Primer
 - Introduction
 - Types
 - Mixing
- Spray gun
 - Introduction
 - Types
 - Adjustment
- Types of additives and their application
- Types and uses of paint remover
- Types and uses of filling materials
- Types and uses of basecoat paints



	<ul style="list-style-type: none"> • Types and uses of topcoat paints • Types and uses of solid paints • Use and importance of colour mixing chart • Use and importance of colour variation • Colour matching methods • Polish <ul style="list-style-type: none"> ◦ Introduction ◦ Types ◦ Methods • Waste management • Occupational health and safety rules and regulations • Importance of first aid kit 		
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NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:18



2045

9	Assessment of Competency				
Unit: 2 Unit Title: Apply body paint	Candidate Details		Assessors Detail		
	Candidate's Name: Registration Number: Symbol No: Test Centre:		Assessors' Name 1. 2. 3.		ID/License No:
	Test Date:				
	Element of competency	Performance Standards	Standard Met	Standard Not Met	Evidence Type
2.1 Prepare tools, equipment and materials	2.1.1 Personal protective equipment (PPE) used in accordance with task requirement. 2.1.2 Tools and equipment collected and checked for working condition in accordance with task requirement. 2.1.3 Materials collected and prepared in accordance with task requirements.				
2.2 Prepare paint surface	2.2.1 Vehicle inspected for painting work. 2.2.2 Surface to be painted clearly marked and rest covered with masking materials . 2.2.3 Vehicle body surface buffed without damaging surface. 2.2.4 Surface of vehicle washed, wiped and foreign materials removed without damaging surface. 2.2.5 Surface sanded to smoothened uneven and rough surface. 2.2.6 Sanded surface wiped and dust removed.				



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:19



	2.2.7 Body filler mixed to cream consistency and filler evenly applied on uneven surfaces.				
2.3 Apply primer	<p>2.3.1 Primer mixed to specified ratio in accordance with manufacturer's specifications and recommendations.</p> <p>2.3.2 Primer loaded not more than marking level without spillage.</p> <p>2.3.3 Spray pattern tested on test panel and adjustments made as per requirement.</p> <p>2.3.4 Primer applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.</p> <p>2.3.5 Surface sanded uniformly after primer dried completely.</p> <p>2.3.6 Sanded surface wiped and dust removed.</p>				
2.4 Apply basecoat paint	<p>2.4.1 Basecoat paint selected as per body color.</p> <p>2.4.2 Color loaded not more than marking level without spillage.</p> <p>2.4.3 Spray pattern tested on test panel and adjustments made as per requirement.</p> <p>2.4.4 Basecoat paint applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.</p>				
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	2.5.5 Topcoat paint applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.				
2.6 Apply solid paint	2.6.1 Color selected as per body color. 2.6.2 Solid paint mixed to specified ratio in accordance with paint manufacturer's specifications and recommendations. 2.6.3 Solid paint loaded not more than marking level without spillage. 2.6.4 Spray pattern tested on test panel and <i>adjustments made</i> as per requirement. 2.6.5 Solid paint applied uniformly maintaining spraying distance of 100-200 mm and spraying angle of 90 degree.				
2.7 Apply polish	2.7.1 Body surface inspected for <i>imperfection</i> . 2.7.2 Imperfection area marked for buffing. 2.7.3 <i>Polish</i> applied uniformly to achieve required level of finish.				
2.8 Clean work area	2.8.1 Masking materials removed as per sequence of layer. 2.8.2 Stains of paint removed without scratching body surface. 2.8.3 Unused materials sealed tightly and stored/stacked at designated place. 2.8.4 Tools and equipment cleaned, maintained, stored and record updated. 2.8.5 Work area cleaned and waste disposed in accordance with <i>3R's principle</i> .				

WT- Written Test

OQ- Oral Question

PT- Practical Test

DO – Direct Observation

SR- Supervisor's report

SN-Simulation

RP- Role Play

PG –Photographs

VD- Video

CT – Certificates

TS – Testimonials (Reward)

PP – Product Produced

CS – Case Study



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:21



Range Statement

Variable	Range
Personal Protective Equipment (PPE)	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Helmet • Mask • Apron • Goggles • Gloves • Safety shoes • Earplug
Masking materials	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Masking paper • Plastic sheet • Masking tape
Foreign materials	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Dust • Dirt • Lubricants • Rust • Paint
Primer	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Epoxy primer • Polyester primer



Adjustment	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Pattern • Discharge • Air pressure
Imperfection	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Uneven surface • Dust, spots • Strains • Drips
Polish	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Rubbing compound • Wax • Liquid polish • Cream polish
3R's principles	<p><i>May include but not limited to:</i></p> <ul style="list-style-type: none"> • Reduce • Reuse • Recycle



NOSS ID #

Developed Date: 2021-03-26

Revision Number: ##

Revised Date: dd/mm/yyyy

Page:23



2045