



# Sample Test Project

**Regional Skill Competitions - Level 3**

**Skill- Car Painting**

*Category: Transportation & Logistics*

## Table of Contents

A. Preface .....	3
B. Test Project .....	4
C. Marking Scheme.....	5
D. Infrastructure List.....	13
E. Instructions for candidates.....	15
F. Health, Safety, and Environment .....	16

SAMPLE

## Section - A

### *A. Preface*

---

#### **Skill Explained:**

Car painters work in various work environments from an Auto body repair shop to an aircraft hangar, are responsible for reinstating the pre-accident paint finish to cars after the structure and/or the panels have been repaired or replaced. They may also be asked to completely repaint a whole vehicle either to change its colour or reinstate its newness. Car painters may also become involved in matching colours to an original colour no longer available or to colours that prove difficult to match. A car painter must match the colour, shade, and texture of the adjoining panels that are not being painted. They can also carry out minor panel repairs and apply undercoats, colour coats, and clear sealant coats which provide the high gloss levels required.

#### **Eligibility Criteria (for IndiaSkills 2018 and WorldSkills 2019):**

Competitors born on or after 01 Jan 1997 are only eligible to attend the Competition.

#### **Total Duration: 7:00 Hours**

<b>Task A</b>	:	4:00 Hours
<b>Task B</b>	:	2:00 Hours
<b>Task C</b>	:	1:00 Hour

## Section - B

### B. Test Project

---

#### Task A – Standard Paint Application – Door Area (2 Layers)

You have **4 Hours** to complete this task

1. Small dent on the panel will be given on the new ED coated door and competitor must repair the damage with the help of relevant Tools & equipments and fillers like polyester putty and then entire panel (Outside & Inside area) must be primed with primer surfacer and further it must be sanded well to make ready for base coat. After the preparation competitor, must apply correct Base coat and Clear coat on both the sides (outside & inside) of the panel.
2. Inside area need to mask to make sure paint are applied in the designated area only and no over spray beyond the masking line indicated.
3. Dry Film Thickness (DFT) of primer surfacer should be within the range given by Paint Supplier as per Technical data sheet (TDS).
4. Panel should be painted in the vertical position.

#### Task B – Spot Repair on Pre-painted panel

You have **2 Hours** to complete this task

1. A scratch on the pre-painted panel will be given to the competitor
2. Repair the scratch from the panel using the appropriate tools
3. Apply the primer, base coat & clear coat on the panel using Spot repair technique
4. The panel should be completed within the boundary / limit indicated for the task given by the jury.
5. Dry the panel using IR lamp and polish the panel.
6. Stop and have your work judged by the Jury.

#### Task C – Plastic panel repair

##### Competitor Instruction Sheet

You have **1 Hour** to complete this task

1. A small scratch on the plastic panel / bumper will be given to the competitor
2. Repair the scratch from the panel using the appropriate tools.
3. Apply the sanding primer on the panel and sand it.
4. The panel should be completed within the boundary / limit indicated for the task given by the jury.
5. Stop and have your work judged by the Jury.

## Section – C

### C. Marking Scheme

**Marking Scheme:** The Assessment is done by awarding points by adopting two methods, Measurement and Judgments

- Measurement - One which is measurable
- Judgment - Based on Industry expectations

Aspects are criterias which are judged for assessment.

#### Example-Judgment Marking

If maximum marks for Judgement criteria are 1 and if all 3 Experts (Juries) give 3 points to a candidate, the candidate will get 1 mark for that aspect. If 2 Experts give 3 and 1 Expert gives 2 points, then candidate will get  $(3+3+2)/9*1 = 0.89$  marks for that aspect out of 1 mark.

Skill			Car Painting	Module	Std. Paint Application			
Candidate Name				Competition date				
Registration No.				State				
Aadhar No.				Contact No.				
Sub Criteria ID	Sub Criteria	Aspect Type	Aspect - Description	Judg Score	Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size	Max Mark	Mark Awarded
A1	Preparation of OEM exterior door	M	OEM Panel cleaned with silicone remover		Cleaning the entire panel before start of repair	Yes or no	0.25	
		M	OEM primer completely removed from repair area		completely removed? Visible standard shown by experts on car parts	Yes or no	0.50	
		M	Deep sanding scratches in the putty		Putty and area around, visible scratches Compare to visible standard from Experts	Yes or no	1.00	
		M	Porosity in the putty, filler, stopper		Are any hole in the putty, compare to visible standard	Yes or no	1.00	
	preparation for	M	OEM panels correctly sanded?		(no shiny areas // 5mmx5mm -0,25)	Tolerance	1.00	

	primer/filler application.	M	OEM panel correctly sanded?		(Surface should not be cut through // 1mm - 4 cut through or more loose all)	Tolerance	1.00	
	Safety Standard followed	M	Required PPEs used during the Preparation		Solvent Vapour mask , Rubber hand Gloves, Safety Glasses, Dust Mask	Tolerance	0.50	
A2	Application of primer filler to exterior door	M	Correct primer applied to bare metal / repair area		As per the company standard	Yes or no	0.50	
		M	Filler thickness correctly before sanding, After TDS standard(between 50 to 120 micron)		Within tolerance between Product TDS? Standard given by Experts	Tolerance	1.00	
	preparation for base coat application	M	Filler / primer correctly sanded		(no shiny areas // 5mmx5mm -0,25)	Tolerance	1.00	
		M	Filler / primer correctly sanded		Surface should not be cut through 3mm, for each cut loose 0.25 marks, more than 4 cut through loose full marks. Standard given by experts Visible standard shown by experts on car	Tolerance	1.50	
		M	Required PPEs used during the Preparation		Solvent Vapour mask, Rubber hand Gloves, Safety Glasses, Dust Mask	Tolerance	0.50	
A3	Application of base coat to exterior door	J	Is base coat made up to Industry standard?	0	There are visible imperfections from 2meters away in 5 seconds		2.00	
				1	no visible imperfections from 2 meters away in 5 seconds			
				2	no visible imperfections from 1 meter away in 5 seconds			
				3	no visible imperfections from 30cms away in 10 seconds			

				0	There are visible imperfections from 2meters away in 5 seconds					
				1	no visible imperfections from 2 meters away in 5 seconds					
		J	Is the basecoat free of sanding marks?	2	no visible imperfections from 1 meter away in 5 seconds			2.00		
				3	no visible imperfections from 30cms away in 10 seconds					
A4	Application of clearcoat to exterior door	M	Have all areas been covered?		Check the 4 sides. 1 side more than 1cm=-0.25	Yes or no.		0.75		
		M	The clear coat free of any reactions?		Boiling, pin hole etc...	Yes or no		1.00		
		M	Clear coat free of runs or sags		More than 3mm loose -0,5 more loose all	Yes or no		1.50		
		M	Is the orange peel the same over the entire surface the door		Check with the cards. More than 1 cards difference-0,25, 2 cards loose 0.5, more than 3 cards difference loose all points	Standard		1.00		
		M	Is any reaction in the polyester putty area?		Hole, popping, etc.	Yes or no		1.00		
		J	Is the shape of the polyester filler area correct	0	repair is visible from direct view					
				1	repair is only visible from side view					
2	repair is visible from one side									
3	repair is not visible from all angles							2.00		
A5	Application of basecoat to interior door	M	Are all areas of the interior covered with base coat?(15 sec)		visible part over the given line. 1 area=-0.25	Tolerance		1.00		
		M	No overspray into the given line and on the 4 sides(15 sec)		More than 1mm -0,25 4 mm-1,00	Tolerance		1.00		
A6	Application of clearcoat to	M	Clear coat free of runs or sags		Bigger than 2 mm. -0,25 pr area	Tolerance		1.00		
		M	Clear coat free of dry area?		Deduct 0.25 per area more then 40mm sq.	Tolerance		1.00		

	interior door							
A7	Basecoat line between interior and exterior door	M	Inside door Free of over spray?		Over spray at the interior more than 2mm -0,5 4 mm-1.0 Experts show line to competitors	Tolerance	1.50	
		M	No paint lifting from masking line indicated		More than 2mm loose -0,50 pr area	Tolerance	1.50	
		M	Was the panel masked to the given line, as per side		Missed the line more than 2mm.Per side loose 0.5 Visible standard shown by experts on car parts	Tolerance	1.00	
A8	Safety Standard followed	M	Required PPEs used during the Base & Clear coat application		Solvent Vapour mask , Rubber hand Gloves, Safety Glasses	Yes or no	0.50	
		M	Were safety standards adhered too?		Working area was clean and tidy	Yes or no	0.50	
						<b>TOTAL</b>	<b>30.00</b>	
<b>(NAME &amp; SIGN OF JURY MEMBER)</b>				<b>(NAME &amp; SIGN OF ASDC MEMBER)</b>				

Skill		Car Painting			Module	Plastic panel repair		
Candidate Name					Competition date			
Registration No.					State			
Aadhar No.					Contact No.			
Sub Criteria ID	Sub Criteria	Aspect Type	Aspect - Description	Judge Score	Extra Aspect Description (Measurement or Judge) OR Judgment Score Description (Judge only)	Requirement or Nominal Size	Max Mark	Mark Awarded
B1	Preparation for Primer/Filler	M	Plastic panel cleaned with		Cleaning the entire panel before	Yes or no	0.50	

			silicone remover		start of repair			
		M	Deep sanding scratches in Bumper		Featherding of scratch are smooth and leveled	Yes or no	0.50	
		M	Putty area sanded correctly		Are there any reactions. EG. Pinholes, etc.	Tolerance	0.75	
		M	Deep sanding scratches in the putty		Putty and area around, visible scratches higher than P240	Yes or no	0.75	
		M	Required PPEs used during the panel preparation		Rubber hand Gloves, Safety Glasses, Dust Mask	Yes or no	0.50	
B2	Preparation for base coat	M	Primer filler applied correctly		No pin hole, no reaction	Yes or no	1.00	
		M	Filler / primer correctly sanded		Surface should not be cut through 3mm 4 cut through or more loose 1,00 Standard given by experts Visible standard shown by experts on car	Tolerance	1.00	
		M	non primed area free from cut		no damage or cut beyond primed area, One cut or damage	Tolerance	1.00	

					lose 0.5 marks			
		J	Is the shape of the polyester filler area correct	0	repair is visible from direct view		2.00	
				1	repari is only visible from side view			
				2	repari is visible from one side			
				3	repair is not visible from all angles			
		M	Is any reaction is the polester putty area?		Hole, Cooking	Yes or no	1.00	
		M	Required PPEs used during the Primer surfacer application		Solvent Vapour mask, Rubber hand Gloves, Safety Glasses	Yes or no	0.50	
		M	Were safety standards adhered too?		Working area was clean and tidy	Yes or no	0.50	
						<b>TOTAL</b>	<b>10.00</b>	

(NAME & SIGN OF JURY MEMBER)

(NAME & SIGN OF ASDC MEMBER)

Skill	Car Painting	Module	Spot Repair Application
Candidate Name		Competition date	
Registration No.		State	
Aadhar No.		Contact No.	

Sub Criteria ID	Sub Criteria	Aspect Type	Aspect - Description	Judge Score	Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement or Nominal Size	Max Mark	Mark Awarded
C1	Preparation of guard for spot repair	M	Repair area correctly prepared		Incl. edges are evenly feathered out 4 cards standard =0,25	Tolerance	0.50	
		M	Repared area correctly clean			Yes or no	0.25	
		M	Repared area primed correctly		UV-filler used.	Yes or no	0.50	
		M	Primer/filler sanded correctly before basecoat		1-2 rub throughs deduct 0.5, more than 2 rub throughs deduct all marks. (If repaired with UV-filler again no lost points.)	No rub throughs	1.00	
C2	Application of base coat to spot repair	J	Base coat made correctly?	0	Blend obvious from all angles or misunderstood		2.00	
				1	Blend obvious from one angle			
				2	Blend not as obvious			
				3	You can not see the repair from any angle			
C3	Application of clearcoat to spot repair	M	Free of dirt in the Clear coat		1-4 deduct 0.25 marks, 5 or more deduct all marks	Free max	0.50	
		M	Clear coat free of		Yes or no.	Yes or no.	1.00	

			runs or sags					
		M	Clear coat free of reactions?		Fish eyes, etc. Deduct 0.25 per reaction evident.	Free max	0.50	
		M	Was the end of the clear coat in the correct position		450mm from the front wing tip.	Yes or no.	1.00	
		M	Was the gloss the same as standard?		Visible standard shown by experts on car parts or card	Yes or no	0.75	
		J	Was the fade out invisible after polishing	0	No attempt at polishing fade out or misunderstood		1.50	
				1	Fade out clearly obvious			
				2	Fade out slightly obvious			
				3	Fade out not obvious at all			
C4	Safety Standard followed	M	Required PPEs used during entire work time		Solvent Vapour mask , Rubber hand Gloves, Safety Glasses	Yes or no	0.25	
		M	Were safety standards adhered too?		Working area was clean and tidy	Yes or no	0.25	
						<b>TOTAL</b>	<b>10.00</b>	

(NAME & SIGN OF JURY MEMBER)

(NAME & SIGN OF ASDC MEMBER)

## Section - D

### D. Infrastructure List

---

#### Equipment / Tools:

S.No	Items	Quantity
1	Paint Booth setup	1
2	Infra-Red Dryer	2
3	Putty applicator knife	10 pcs
4	Plate for Putty Mixing	5 pcs
5	Dust Extraction Sanding Machine: 3M , Mirka	2
6	Hand Blocks (Small & medium) 3M, Mirka	5 each set
7	Sanding paper Disc – P80, P120, P180, P320, P400, P500, P600	30 pcs each
8	Sanding paper Sheet P80, P120, P180, P320	20 pcs each
9	Scotch Brite Grey	1 Pcs per Competitor
10	Scotch Brite Purple	1 Pcs per Competitor
11	HVLP Spray Gun for Primer Surfacer	4
12	HVLP Spray guns for Base coat	4
13	HVLP Spray Guns for Clear Coat	4
14	Spray Gun cleaning unit	1
15	Stands for Paintings	5
16	Table for work stations	5
17	Pressure Gauge for Spray Guns	4
18	SATA RPS Cups 0.6 L - 200 Mic/3M PPS	50
19	Spray Gun Coupler	4
20	DFT Meter	1
21	Mixing Scale for Colour mixing	5
22	Weigh Balance	2
23	Cleaning / Degreasing Cloth	50
24	Tack Cloth	15
25	Masking paper – Brown	1 Roll
26	Making tape – 1 inch	20 Pcs
27	Fine Line Masking Tape -9 mm	10 Pcs
28	Dry Guide coat	5
29	Panel – Door ED coated panel	1/competitor
30	Panel – Fender Pre-painted panel	1/competitor
31	Panel – Plastic part	1/competitor

**Consumables:**

<b>S.No</b>	<b>Items</b>	<b>Quantity</b>
1	Degreasers (Silicone Remover)	5 ltr
2	Polyester putty with Hardener for Plastic	4 Kg
3	Polyester putty with Hardener for Metal surface	2 kg
4	2K Primer Surfacer fast drying (Grey)	4 ltr
5	2K Hardener for Primer surface	2 ltr
6	2K Thinner	10 ltr
7	Solvent Borne Tints and Binder for making colour	5 ltr
8	Fast drying Clear	5 ltr
9	Hardener for Clear	2 ltr
10	Gun cleaning NC thinner	10 ltr

**Safety Items:**

<b>S.No</b>	<b>Items</b>	<b>Quantity</b>
1	Solvent Vapour mask /	1 / competitor
2	Air fed mask	1 / competitor
3	Dust mask	1 / competitor
4	Cotton Hand Gloves	1 / competitor
5	Rubber hand Gloves	1 / competitor
6	Ear plugs	1 / competitor
7	Pair of Safety Shoes	1 / competitor
8	Pair of Safety Glasses	1 / competitor
9	Anti-Static Cloth for Paint Spraying	1 / competitor
10	Uniform	1 / competitor

## Section – E

### E. Instructions for candidates

---

1. Candidate must wear the prescribed Personnel Clothing while performing the task and ensure safety of equipment and personnel's working around his workstation.
2. The Competitor must use the following Personal Protective Equipment:
  - Dust Protection mask;
  - Solvent resistant Gloves;
  - Safety glasses;
  - Ear protection;
  - Safety shoes
  - Dust free overall with hood
  - Solvent Vapor Resistant mask
  - Safety measures have to be taken at the workstation (extractors for dry sanding and spraying);
  - Safety procedures must relate to the paint sponsors data sheets
3. Candidate should remain present at the Competition venue 30 min before start of work
4. Each candidate would be allotted a specific time to complete the task, no further extension would be given to anyone unless specified by Jury.
5. Candidates must follow the instructions given by Jury.
6. Candidate must dispose-off the environmentally harmful products carefully.
7. Candidate must adhere to the MSDS (Material Safety Data Sheets) provided by the paint manufacturer.
8. In case of any difficulty the candidate must seek support of Jury members.

## Section – F

### **F. Health, Safety, and Environment**

---

1. All accredited participants, and supporting volunteers will abide by rules and regulations with regards to Health, Safety, and Environment of the Competition venue.
2. All participants, technicians and supporting staff will wear the required protective personnel clothing.
3. All participants will assume liability for all risks of injury and damage to property, loss of property, which might be associated with or result from participation in the event. The organizers will not be liable for any damage, however in case of Injury the competitor will immediately inform the immediate organizer for medical attention.

SAMPLE