

36 Car Painting

WorldSkills Standards Specification

Section	WSSS Marks
1	Work organization and management
2	Communication and interpersonal skills
3	Preparation for painting
4	Application of adhesion promoters and primers
5	Base coat and ground coat application
6	Clear coat application
7	Colour evaluation and colour adjustment
8	Design, layout, and measurement
9	Remove minor damage and defects from painted and non-painted surfaces

Criteria

ID	Name
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A	Blend prepainted bumper
B	Masking of vehicle and painting a plastic part
C	Standard application inside and outside door
D	Application of basecoat-clearcoat wet-on-wet hood/bonnet
E	Design on pre-painted wheel
F	Repair scratch and blend three layer on fender. Polish
G	
H	
I	

Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
A1	Preparation of plastic panel repair		M	Was repair area cleaned with 541-30 (WS S3c) or (WS S15)	0 1 2 3
			M	Was the area properly sanded for primer - See standard .25 for n	
			M	Repaired area was primed to given location - see standard for - n	
			M	Primer/filler sanded with no texture, no gloss and no cut throughs	
			M	Was the entire area cleaned with 700-1 - Standard: Not wiped off	
A2	Application of base coat		J	Blending of Basecoat - Part should be position as if on the car	
A3	Application of clearcoat		M	Free of dirt	

A4	Sustainability		M	Clear coat free of runs or sags	0 1 2 3
			M	Clear coat free of reactions	
			M	Was the end of the clear coat within space given - too far out	
			M	Was the gloss and texture the same as standard	
			J	Was the fade out invisible after spraying	
			M	Experts have to measure the weight of the liquid material (stored	
			M	Experts have to measure the weight of masking materials (stored	
Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
B1	Preparation for painting of non steel panel		M	Color retrieval, determines the right color from given color variation	
B2	Masking of vehicle		M	Cleaning of the new plastic panel	
			M	Correctly sanding of the new plastic panel	
			M	Primed correctly the new plastic panel (Use 285-2XX with 522-10	
			M	Application of base coat (2 and 1/2 coats)	
			M	Application of clear coat	
			M	Free of dirt	
			M	Clear coat free of runs or sags	
B3	Sustainability		M	Vehicle cleaned correctly	
			M	Correct use of masking tapes	
			M	Correct use of trim masking tape	
			M	Correct use of soft edge tape	
			M	Minimum 30 cm area protected	
			M	No folds or wrinkles	
			M	No overtaping	
			M	Experts weigh the masking waste on a scale after Experts have d	
			M	Experts weight the liquid material waste on a scale, stored in a se	

Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
C1	Preparation of new OEM panel		M	Factory primer completely removed from repair area	
C2	Preparation for primer (evaluate after the clear has been applied)		M	Correct body filler application	
C3	Application of primer filler to exterior door		M	UV thickness correct before sanding, three measurements must be taken	
C4	Preparation of primer for base coat		M	UV primer sanded first with sanding block	
			M	Was guide coat used during sanding?	
			M	Cleaning of panel, in and outside with 700-10	
			M	Does the nonstanding primer cover inside and outside completely?	
C5	Application of basecoat		J	Are there sanding marks in the e-coat outside the polyester filler?	0 1 2 3
C6	Application of clearcoat to in and outside of the new OEM panel		M	Is the clear coat the proper thickness?	
			M	Clear coat free of runs or sags	
			M	Does the finish have the correct matt finish?	
			M	Is the orange peel the same over the entire surface of the door?	
			M	Is there solvent pop in the clear coat	
C7	Application of base coat in and outside of the panel		J	Are there streaks/mottling?	0 1 2 3
C8	Polyester filler repair		J	Is the shape of the polyester filler area correct?	0

C9	Sustainability		M M	Measure the weight of waste paint material (stored in a box) Measure the weight of paint related products (stored in a box)	1 2 3
Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
D1	Wet on wet system on a new OEM metal panel. Follow TD		M M M M M M M M M M M	Panel cleaned Primer application Flashing of primer Basecoat coverage - evaluate at the end of competition day Is there banding/stripes or Mottling in the metallic Quality of clear coat - exterior Application of clear dry/rough areas Application of clear - dirt/dust Quality of clear coat - interior Application of clear dry/rough areas Application of clear - dirt/dust	
D2	Sustainability		M M	Measure the amount of liquid waste material (in a box). Measure film build	
Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
E1	Design with 2 colours				

E2	Color and clear application		M M	Design correctly placed for the red color Design correctly placed for the blue color	
E3	Dimensions of decoration		M M M M	Is the red colour covered Is the blue colour covered Clear coat free of runs or sags Clear coat free of reactions? Solvent pop etc.	
E4	Sustainability		M M M M M M	Design free of overspray, inside / outside Design free of tape printing Sharpness of edges #1 white & blue colours Softness of edge-2 blue & red colours Measure the amount of liquid waste material Measure the amount of masking material (stored in an box)	
Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
F1	Preparation of damaged panel with three-layer colour pain		M M M M	Damaged metal panel cleaning and polishing for colour retrieval Preparation of spray-out cards for three-layer colour Was matching card given do the expert Impression of Base coat on sprayout card	
F2	Preparation for primer filler		M M M M M M M M M M	Repair scratch (50 mm) bare metal Selected proper primer filler - gray shade /05 Selected cleaning, 700 - 10 Primer filler application Shade Film Preparation of primer and balance of panel Fade out Cleaning	

F3	Base coat application three-layer colour		M M M M	Base coat step 1 in the correct range/distance of the repair Base coat step 2 in the correct range/distance of the repair Blend in done with reduced air pressure - see blue for droplet size Check the spray out card with the panel	
F4	Application of clear coat		M M	Clear coat free of dirt Clear coat free of runs or sags	
F5	Polishing of clear coat defects		M M M	Defect #1 scratch P 800 Defect #2 scratch P 1000 Defect #3 P 1500	
F6	Sustainability		M M	Note the repaired liquid material (check job card PMP) Measure used paint related products (stored in a box)	
Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score
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Sub Criterion ID	Sub Criterion Name or Description	Day of Marking	Aspect Type M = Meas J = Judg	Aspect - Description	Judg Score

	Mark

	12.50
	12.50
	25.00
	12.50
	12.50
	25.00

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
Did they clean with the proper cleaner yes or no - if they us	Tolerance	2		1.00
Note Reason:				
Note:	Yes or no	3		0.50
Note:	Yes or no	4		1.00
Note:	Yes or no	3		0.50
Note:	Yes or no	3		0.50
		7		2.00
You can see the complete blend from all angles				
You can see the blend from one angle				
Blend not as obvious, but you can still see that it was blend				
You cannot see the blend at all				
1-4 deduct 0.25 marks, 5 or more deduct all marks - spray	Free max	5		1.00

Criterion A Total Mark 12.50

Yes or no.	Yes or no.	9		1.00
Fish eyes, etc. Deduct 0.25 marks per reaction evident.	Free max	3		1.00
400mm from the damaged area.	Yes or no.	9		1.00
Visible standard shown by experts on car parts or card	Yes or no	9		1.00
		5		1.00
No attempt at polishing fade				
Fade out clearly obvious				
Fade out slightly obvious				
Fade out not obvious at all				
120 grams and under - full marks, 120-170 grams half marks	Tolerance	1		0.50
120 grams and under - full marks, 120-170 grams half marks	Tolerance	1		0.50
Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
Selected the correct variant	Yes or no	7		0.50
Cleaned the part	Yes or no	3		0.50
All gloss was removed for adhesion	Yes or no	3		0.50
Free of runs and dry spots	Yes or no	4		0.50
Full coverage with no imperfections	Yes or no	5		1.00
Perfect is 1/2 coat plus 1 full coat	Tolerance	6		1.00
Each imperfection - deduct .25 marks	Tolerance	5		0.50
	Yes or no	6		0.50
Were both cleaners used before masking?	Yes or no	2		0.50
Visible standard shown by experts on car. Deduct 0.25 marks	Tolerance	8		2.00
Visible standard shown by experts on car. Deduct 0.25 marks	Tolerance	8		0.50
Visible standard shown by experts on car. Deduct 0.25 marks	Tolerance	8		2.00
Visible standard shown by experts on car. Deduct 0.25 marks	Tolerance	8		0.50
Visible standard shown by experts on car. Deduct 0.25 marks	Tolerance	8		0.50
Visible standard shown by experts on car. Deduct 0.25 marks	Tolerance	8		0.50
450 grams and below receive all marks, 450 -550 grams half marks	Tolerance	1		0.50
175 grams and under - full marks, 190 grams receive half marks	Tolerance	1		0.50

Criterion B Total Mark 12.50

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
If filler was applied over OEM primer lose all marks.	Yes or no	2		1.00
Are there any color variations in the mixture when applied	Yes or no	3		1.00
Deduct 1.0 mark per measurement outside TDS standard	Tolerance	4		2.00
	Yes or No	3		1.00
Did they use a guide coat?	Yes of No	3		1.00
Was the correct cleaner used?	Yes or no	3		1.00
Check for coverage inside and out deduct .50 one part no	Tolerance	4		2.00
		5		2.00
Swirl scratches and stright line scratches Either Swirl scratches and stright line scratches Shiny areas in e-coat No visible imperfections				
Check three given areas and take average - full marks if a	Yes or no.	6		1.00
Deduct .50 marks for each imperfection	Tolerance	6		2.00
Add gloss meter points difference together. 27.5 - 32.5 po	Tolerance	6		2.00
See standard - Card 7 or higher - full marks, Card 6 - lose	Standard	6		2.00
If less then 25% deduct .50 marks. If more then 25% of th	Tolerance	3		1.00
		5		2.00
There are visible imperfections from 1 metre away in 20 s				
More then 25% or heavy mottling				
Less than 25% or light mottling				
No visible imperfections				
		3		2.00
Repair is visible from direct from face view				

Criterion C Total Mark 25.00

Repair is only visible from side view
Repair is visible from one side
Repair is not visible from all angles

Below 25% wastage full marks, 25% - 30% deduct half mark
More than five disc's, five block's, and two scuff pads. Loss of marks

	Tolerance	1		1.00
	Tolerance	1		1.00

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
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Washed with 700-10 with correct cleaner	Yes or no	2		1.00
Primer covered all areas inside and outside - see standard	Tolerance	4		1.00
Lose .25 marks for each area that does not have coverage				
Flash of time before base coat 25-30 minutes	Yes or no	5		1.00
Deduct 0.50 marks for each area that is not covered.	Tolerance	5		2.00
This is to include all edges -				
This does not apply to areas under ribs/frame of hood				
Deduct .50 marks for mottling. Deduct .50 marks for banding		5		1.00
Runs and sags - up to 3mm deduct .50 marks each. Over 3mm deduct 1.00	Tolerance	6		1.00
Clear coat free of dry areas. Standard for texture 8-10 full	Tolerance	6		1.00
Clear coat free of dirt/dust. Deduct .25 marks for every five	Tolerance	6		1.00
Runs and sags - up to 3mm deduct .50 marks each. Over 3mm deduct 1.00	Tolerance	6		1.00
Clear coat free of dry areas. Standard for texture 4-10 full	Tolerance	6		1.00
Clear coat free of dirt/dust. Deduct .25 marks for every five	Tolerance	6		0.50
.25 marks for 620 grams or less. .25 marks 50 grams or less	Tolerance	1		0.50
.25 marks for total film, 137 -176 um total film build	Tolerance	1		0.50

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
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Criterion D Total Mark 12.50

Criterion E Total Mark 12.50

Deduct .25 marks for each uneven area	Tolerance	8	1.00
Deduct .25 marks for each uneven area	Tolerance	8	1.00
Basecoat not covered, deduct .25 marks per defect	Tolerance	5	1.00
Basecoat not covered, deduct .25 marks per defect	Tolerance	5	1.00
Deduct .50 marks for each defect	Tolerance	6	1.00
Deduct .50 marks for each defect	Tolerance	6	1.00
Deduct .50 marks for each defect	Tolerance	8	2.00
Deduct .50 marks for each defect	Tolerance	8	1.00
Deduct .50 marks for each defect	Tolerance	8	1.50
Deduct .50 marks for each defect	Tolerance	8	1.00
0 - 50 grams ready to spray (red), 0 - 20 grams after appl	Tolerance	1	0.50
0 - 520 grams full marks. 521 - 550 grams deduct .25 mar	Tolerance	1	0.50

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
Yes receive all marks. No receive zero marks	Tolerance	7		1.00
No card = 0 marks, only 1 card = 0.5 marks, 2 cards = 1.0	Tolerance	7		2.00
	yes/no	2		1.00
Number of cards sprayed - deduct .50 marks for each card		7		2.00
8mm or more for each ring - receive all points	Tolerance	9		1.00
Less than 8mm receive zero points				
Primer selection - gray shade /05. See job card	yes or no	3		1.00
Selected the proper cleaner, yes or no	Tolerance	3		1.00
285 - 2XX highest quality (can check by job card PMP Sof	Tolerance	4		1.00
The right grey shade (can check by job card PMP Softwar	Tolerance	7		1.00
Film build 80-120 µm (Expert measure after primer filler d	Tolerance	4		1.00
0 - 49 lose all marks, 50 - 120 all marks, 121 - 149 half ma				
No cut throughs	yes or no	3		1.00
Fade out area was sanded according to standard - if not d	yes or no	3		1.00
Selected the proper cleaner - 700-1		3		1.00

Criterion F Total Mark 25.00

Just outside the given range receive .50 marks. Complete	Tolerance	5		1.00
Just outside the given range receive .50 marks. Complete	Tolerance	5		1.00
	Tolerance	7		1.00
Matches card	yes or no	7		1.00
0 - 12 items of dirt is full marks. 13 -15 items is half mark	Tolerance	6		1.00
Run or sag of 1 metre long in 10 seconds	yes or no	6		1.00
Can you see the scratches in 10 seconds at 1 metre	yes or no	9		1.00
Can you see the scratches in 10 seconds at 1 metre	yes or no	9		1.00
Can you see the scratches in 10 seconds at 1 metre	yes or no	9		1.00
0-120 grams full marks, 120-150 grams deduct .25 marks	Tolerance	1		0.50
0-150 grams full marks, above 150 grams deduct all mark	Tolerance	1		0.50

Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
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Criterion G

Total
Mark

0.00

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Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
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Criterion H

Total
Mark

0.00

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Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only)	Requirement (Measurement Only)	WSSS Section	Calculation Row (Export only)	Max Mark
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Criterion I

Total
Mark

0.00

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Competition	Total Mark	100.00
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