

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 r | |
| | | | M | Repaired area was primed to given location - see standard for - r | |
| | | | 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 M M M J | Clear coat free of runs or sags Clear coat free of reactions Was the end of the clear coat within space given - too far out Was the gloss and texture the same as standard Was the fade out invisible after spraying | 0 1 2 3 |
|------------------|---|----------------|--------------------------------------|--|------------------|
| | | | M M | Experts have to measure the weight of the liquid material (stored 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 M M M M M M M | Color retrieval, determines the right color from given color variations Cleaning of the new plastic panel Correctly sanding of the new plastic panel Primed correctly the new plastic panel (Use 285-2XX with 522-1000) Application of base coat (2 and 1/2 coats) Application of clear coat Free of dirt Clear coat free of runs or sags | |
| B2 | Masking of vehicle | | M M M M M M M | Vehicle cleaned correctly Correct use of masking tapes Correct use of trim masking tape Correct use of soft edge tape Minimum 30 cm area protected No folds or wrinkles No overtaping | |
| B3 | Sustainability | | M M | Experts weigh the masking waste on a scale after Experts have done Experts weight the liquid material waste on a scale, stored in a sealed | |

| 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 a | | M | Correct body filler application | |
| C3 | Application of primer filler to exterior door | | M | UV thickness correct before sanding, three measurements must | |
| C4 | Preparation of primer for base coat | | M | UV primer sanded first with sanding block | |
| C5 | Application of basecoat | | 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 | |
| | | | J | Are there sanding marks in the e-coat outside the polyester filler | |
| C6 | Application of clearcoat to in and outside of the new OEM | | M | Is the clear coat the proper thickness? | 0 1 2 3 |
| | 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 | Panel cleaned Primer application Flashing of primer Basecoat coverage - evaluate at the end of competiton 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 | |

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|------------------------|--|-------------------|---|--|---------------|
| 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 |
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| ification | | | |
|-----------|-----------------|--------------|-----------|
| | WSSS Marks | Aspect Marks | Variation |
| | 5.00 | 7.00 | 2.00 |
| | 5.00 | 4.50 | 0.50 |
| | 14.00 | 15.50 | 1.50 |
| | 11.00 | 8.50 | 2.50 |
| | 16.00 | 15.50 | 0.50 |
| | 17.00 | 18.00 | 1.00 |
| | 11.00 | 10.50 | 0.50 |
| | 13.00 | 13.50 | 0.50 |
| | 8.00 | 7.00 | 1.00 |
| | Total Variation | | 10.00 |

| | |
|--|------|
| | |
| | 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 use Note Reason: | Tolerance | 2 | | 1.00 |
| 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 blended 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

| 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 |
| Did they use a guide coat? | Yes or No | 3 | | 1.00 |
| Was the correct cleaner used? | Yes of No | 3 | | 1.00 |
| Check for coverage inside and out deduct .50 one part no | Yes or no | 3 | | 1.00 |
| | 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

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| | | | | |
| | 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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Criterion D Total Mark 12.50

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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 | 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 | 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 E Total Mark 12.50

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| 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

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| 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 |

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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 | Criterion G | Total Mark | 0.00 |
| | | | | | | | |
| Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only) | Requirement (Measurement Only) | WSSS Section | Calculation Row (Export only) | Max Mark | Criterion H | Total Mark | 0.00 |
| | | | | | | | |
| Extra Aspect Description (Meas or Judg) OR Judgement Score Description (Judg only) | Requirement (Measurement Only) | WSSS Section | Calculation Row (Export only) | Max Mark | Criterion I | Total Mark | 0.00 |
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| Competition | Total Mark | 100.00 |
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