



# Sample Test Project

**Regional Skill Competitions – Level 3**

**Skill 13 - Autobody Repair**

*Category: Transportation & Logistics*

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SAMPLE

## Section - A

### *A. Preface*

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#### **Skill Explained:**

Auto body repairers realign both the structure and the panelling of both light and heavy good vehicles after they have been involved in collisions. This can often be a complex process as each collision will present different degrees and directions of damage. The repaired vehicle must conform to the stringent specifications laid down by the vehicle manufacturer and meet both their tolerances and their safety specifications. An auto body repairer needs to be familiar with mechanical components and their function as well as the specific and complex safety restraint systems (SRS) fitted to modern vehicles. Minor damage that does not require replacement of parts or a panel, will use a variety of repair tools, to remove the damage panel and reinstate the panel's original contours the repairer returns the vehicle in a condition where its ready for refinishing by a car painter.

#### **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: 4:30 Hours**

<b>Task A</b>	<b>:</b>	<b>1.5 Hours</b>
<b>Task B</b>	<b>:</b>	<b>1.5 Hours</b>
<b>Task C</b>	<b>:</b>	<b>1.5 Hours</b>

## Section - B

### B. Test Project

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#### Task A – Diagnosis and Measurement

##### Competitor Instruction Sheet

You have **90 Minutes** to complete this task

- Start up the CAR-O-LINER Vision2X3 software on computer and make a new work order with correct vehicle type, vehicle make & data sheet.
- The work order must be created and saved with your first name, surname etc.
- Ensure that all the clamps and bench mountings are correctly fitted and tightened as per dimensions in the datasheet.
- Ensure Bench mountings and clamps are tightened as per proper sequence & torqued to 160 Nm.
- Correctly fix the measuring bridge/ladder and ensure properly locked.
- Fix the Car-O-Tronic slide on the measuring bridge & insert the battery & turn it on. Make the bluetooth communication with the software & PC.
- Vehicle setup, zero set, centering with measuring points in passenger compartment.
- Measure some other under body points and report the extent of misalignment.
- Save data sheet/damage report on computer and take print out of diagnosis



#### **A STOP**

Submit the print report to jury & give oral explanation of the repair process & explanation of the pulling accessories according to the diagnosis report.

## **Task-B: Non-Structural Part Replacement**

### **B1: Side Body Outer (Sill) Removal and Refit**

- Safe work practices must always be followed and usage of proper PPEs
- Jury will provide instruction on which side of sill (running board) to be cut, remove and refit

Cut lines for butt welding & Cut outer panel only (Length 450mm)

#### **Front side sill (Left side) & (Right side):**

- Remove all Spot welds on flange (upper and lower side) with spot drill (8mm bit size).
- Remove all paint from areas of welding on flanges and joints from the part. Minimum 10mm around a hole for plug-welding.
- For butt-welding, 10mm or more inside and outside must be bare metal.
- Straighten (repair) all distorted flanges and remove all spot weld remnants with grinder or sander. Any accidental holes or tears to parts also to be ground and cleaned but not be welded until inspection by Jury. If you do - you will lose all the points in this marking area.
- Cut the new part as per the dimension indicated above.
- Make holes for plug welding on the lower side flange of sill on new part (as per the welding instruction figure).
- Hold the parts on the fixture and clamp. At this point, the assembly should be ready for Welding.

**Important information: Jury will disassemble the part for marking purpose.**

**STOP: Jury to inspect the parts for any damage occurred and check matching and measure the gap at butt joint**

### **B2: Fitting and Welding**

- Safe work practices must always be followed and usage of proper PPEs

#### **Welding instructions:**

#### **Front side sill (Left side) & Front side sill (Right side)**

- Do Spot welding as per the original position on upper side flange on Front sill.
- Do the plug welding lower side flange on all holes as instructed and butt welding on cut joint.
- Do butt welding along the cut joints with proper penetration.
- Completed welds must not be dressed, ground, sanded or cleaned before marking.

**B2 STOP: Jury to complete marking for the above job.**

### **B3: Grinding and Finishing**

- Safe work practices must always be followed.
- Grind and sand all plug and butt welds properly.
- Avoid thinning due to excessive grinding.

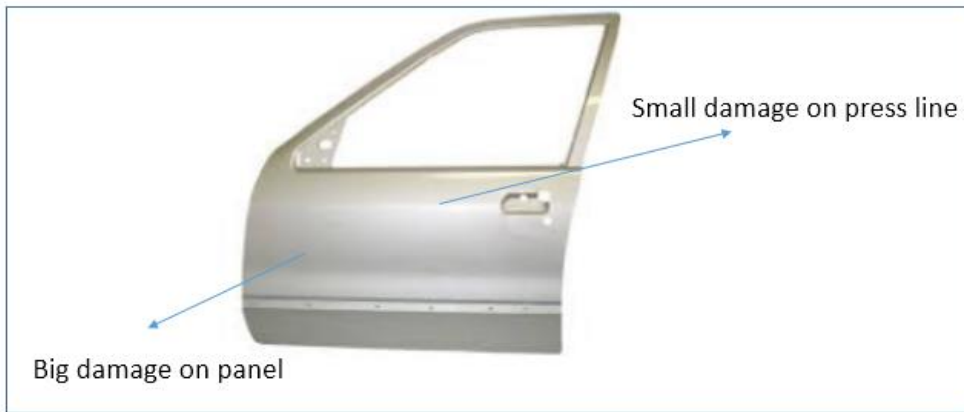
## Task C: Panel Repair

### ➤ Panel Repair 1:

- Repair the **Big dent damage** on Door panel using metal finishing process preferably z0073by using Hammer & Dolly.
- Safe work practices must always be adhered.
- The repair must have the original contour and shape.
- Panel shrinking must be done with electrical equipment.
- Repair surface defects if any. Sand the surface and create feather edge on the surfaces using proper tool and sandpaper.
- Repair must not have deep file or grinder marks.
- The panel repair area must not be over thinned due to excessive filing or sanding.
- Repair until featheredging; do not perform Body filler application.

### ➤ Panel Repair 2:

- Repair the **Small damage on Press Line** on Door panel using metal finishing process Preferably by Washer welding.
- Safe work practices must always be adhered.
- The repair must have the original contour and shape.
- Panel shrinking must be done with electrical equipment.
- Repair surface defects if any. Sand the surface and create feather edge on the surfaces using proper tool and sandpaper.
- Repair must not have deep file or grinder marks.
- The panel repair area must not be over thinned due to excessive filing or sanding.
- Repair until featheredging; do not perform Body filler application.



**STOP**

- Show the work material to Jury

SAMPLE

## 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 criteria's which are judged for assessment.

#### Example-Judgment Marking

If maximum marks for Judgement criteria is 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.

In Auto Body Repair Test Project all assessment are done adopting method of **Measurement only.**

<b>Module A1</b>			Date		
Participant Name :			Duration:		
Organization :			Total. Marks:	20	
	<b>Diagnosis and Measurement</b>				
<b>SL No</b>	<b>Process Evaluation</b>	<b>Criteria</b>	<b>Total marks</b>	<b>Marks Obtained</b>	<b>Remarks by Jury</b>
1	Safety rules followed as per instruction	PPE usage Deduct 0.25 for each safety if not followed	1.5		
2	Ensure the vehicle is mounted with B106 clamps at correct distance as per data sheet	Tolerance $\pm$ 5mm Deduct 0.125 for wrong distance	0.5		
3	Ensure bench mounting bolts are correctly torqued in proper sequence	160 Nm (min) Deduct 0.25 for each incorrect torque	0.5		
4	Ensure B106 Clamps bolts are correctly torqued in proper sequence	160 Nm (min) Deduct 0.25 for each incorrect torque	0.5		
5	Start up the Vision 2 software and make a new work order with your name and by selecting the correct data sheet	Deduct 0.25 for not filling minimum required	0.5		



		details			
6	Ensure Measuring scale is properly placed, locked / torqued	10 Nm (min) Deduct 0.25 for incorrect torque	0.5		
	<b>Lower body measurement</b>				
7	Left side centering point 23 correctly reported	Tolerance $\pm$ 1mm Deduct 0.15 for each wrong L/W/H centering	0.5		
8	Right side centerring point 23 correctly reported		0.5		
9	Right side centering point 18 correctly reported		0.5		
10	Left side centering point 18 correctly reported + point L19		0.5		
11	Left side measuring point 1 correctly reported (L1)	Tolerance $\pm$ 3mm Deduct 0.15 for each wrong L/W/H measuring	0.5		
12	Right side measuring point 1 correctly reported (R1)		0.5		
13	Left side measuring point 3 correctly reported (L3)		0.5		
14	Right side measuring point 3 correctly reported (R3)	Tolerance $\pm$ 3mm Deduct 0.15 for each wrong L/W/H measuring	0.5		
15	Left side measuring point 4 correctly reported (L4)		0.5		
16	Right side measuring point 4 correctly reported (R4)		0.5		
17	Left side measuring point 5 correctly reported (L5)		0.5		
18	Right side measuring point 5 correctly reported (R5)		0.5		
19	Left side measuring point 8 correctly reported (L8)		0.5		
20	Right side measuring point 8 correctly reported (R8)		0.5		
21	Left side measuring point 9 correctly reported (L9)		0.5		

22	Right side measuring point 7 correctly reported (R7)		0.5		
23	Left side measuring point 13 correctly reported (L13)		0.5		
24	Right side measuring point 13 correctly reported (R13)		0.5		
25	Left side measuring point 14 correctly reported (L14)		0.5		
26	Right side measuring point 14 correctly reported (R14)		0.5		
27	Left side measuring point 17 correctly reported (L17)		0.5		
28	Right side measuring point 17 correctly reported (R17)		0.5		
29	Left side measuring point 29 correctly reported (L29)		0.5		
30	Right side measuring point 29 correctly reported (R29)		0.5		
	<b>Upper body measurement</b>				
31	Left side measuring point 1 correctly reported (HL1)		0.5		
32	Right side measuring point 1 correctly reported (HR1)		0.5		
33	Left side measuring point 6 correctly reported (HL6)	Tolerance $\pm$ 5mm Deduct 0.15 for each wrong L/W/H measuring	0.5		
34	Right side measuring point 6 correctly reported (HR6)		0.5		
35	Left side measuring point 13 correctly reported (HL13)		0.5		
36	Right side measuring point 13 correctly reported (HR13)		0.5		
37	Take print out of Lower body & Upper body, Submit to Jury		Deduct 0.5 for each print out not submitted	1	
	<b>TOTAL MARKS</b>		<b>20</b>		
	(NAME & SIGN OF JURY MEMBER)		(NAME & SIGN OF ASDC MEMBER)		

<b>Module A2</b>			Date		
Participant Name :			Duration:		
Company Name :			Total Marks:	15	
	<b>Correction: Repair and Realign structural damage</b>				
<b>SL No</b>	<b>Process Evaluation</b>	<b>Criteria</b>	<b>Total marks</b>	<b>Marks Obtained</b>	<b>Remarks by Jury</b>
1	Ensure the draw aligner is placed and locked properly	Deduct 0.25 for wrong placement	0.5		
2	Usage of right pulling clamps to repair the damage	Deduct 0.25 for wrong usage	0.5		
3	Use of safety cable before repair for safety purpose	Deduct 0.25 for wrong usage	0.5		
4	Usage of pulling chain, shortener, Air pump with proper safety	Deduct 0.25 for wrong usage	0.5		
5	Assembly of EVO tools as required and placement at correct location	Deduct 0.5 each for wrong assembly and placement	2		
6	Left side measuring point 1 correctly reported (L1)	Tolerance $\pm$ 3mm Deduct 0.15 for each wrong L/W/H measuring	0.5		
7	Right side measuring point 1 correctly reported (R1)		0.5		
8	Left side measuring point 3 correctly reported (L3)		0.5		
9	Right side measuring point 3 correctly reported (R3)		0.5		
10	Left side measuring point 4 correctly reported (L4)		0.5		
11	Right side measuring point 4 correctly reported (R4)		0.5		
12	Left side measuring point 5 correctly reported (L5)	Tolerance $\pm$ 3mm Deduct 0.15 for each wrong L/W/H measuring	0.5		
13	Right side measuring point 5 correctly reported (R5)		0.5		
14	Left side measuring point 8 correctly reported (L8)	Tolerance $\pm$ 3mm Deduct 0.15 for each wrong L/W/H measuring	0.5		
15	Right side measuring point 8 correctly reported (R8)		0.5		
16	Left side measuring point 9 correctly reported (L9)		0.5		
17	Right side measuring point 7 correctly reported (R7)		0.5		
18	Left side measuring point 13 correctly reported (L13)		0.5		
19	Right side measuring point 13 correctly reported (R13)		0.5		
20	Left side measuring point 14		0.5		

	correctly reported (L14)				
21	Right side measuring point 14 correctly reported (R14)		0.5		
22	Left side measuring point 17 correctly reported (L17)		0.5		
23	Right side measuring point 17 correctly reported (R17)		0.5		
24	Ensure measuring data is saved in After repair screen	Deduct 0.25 if not saved in after repair screen	0.5		
25	Take print out of before repair and after repair, submit to Jury	Deduct 0.5 for each printout not taken	1		
26	No damage or distortion to parts not being replaced/repared	Deduct 0.25 if damage/distorted	0.5		
	<b>TOTAL MARKS</b>		<b>15</b>		
(NAME & SIGN OF JURY MEMBER)			(NAME & SIGN OF ASDC MEMBER)		

<b>Module B (Non-Structural Replacement)</b>				Date				
Participant Name :				Duration: 2.5 hours				
Company Name :				Total. Marks: 40				
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judge Score	Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judge only)	Requirement or Nominal Size (Obj Only)	Max Mark	Marks Awarded
B1	PANEL REMOVAL AND FIT INSTALLED REPLACEMENT PANEL/PARTS (FIT-UP)							
		S	Wear necessary PPE - gloves, mask, ear plugs, eye		Deduct 0.25 marks for each safety gadgets not used as per process	Yes/No	1.50	

			protection, leather gloves, safety shoes				
		S	Confirmation of damaged area - Visual, with hands & gap check		Deduct 0.3 marks for each method for checking not done	Yes/No	1.00
		O	Butt joint is cut as per given location		Deduct 0.625 for outside of tolerance (Check as per Manual-4 locations)	tolerance: ±3mm	3.00
		O	Butt joint gap is within tolerance		Deduct 0.5 for each 5mm of joint outside of tolerance	0-1 mm	2.50
		O	No damage or distortion to parts not being replaced		Deduct 0.25 for each starting 5mm damage to panel	Yes/No	1.50
		O	No damage to flanges/reinforcements by cutting or drilling		Deduct 0.2 for each starting 5mm damage to panel	Panel Damage	2.00
		O	No weld remnants remain in spot weld areas and flanges		Deduct 0.25 for each starting 25mm not straightened	Yes/No	0.50
		O	No weld remnants remain in spot weld areas and flanges		Deduct 0.25 for each spot weld remnant not ground level	Yes/No	1.00

B2	REPLACE PANEL/PART(S)	O	No weld remnants remain in spot weld areas and flanges Holes drilled for plug welding (dia as per sheet thickness & no. as per body repair manual)	Deduct 0.25 for each starting 5mm area being ground too deep	Prover Grounded	0.50	
		O	Coatings on original body removed in areas to be welded	Deduct 0.25 for each with wrong number or diameter	As per repair manual	2.00	
		O	Coatings on replacement parts removed in areas to be welded	Deduct 0.2 for each starting 50mm area where coating are not removed	Yes/No	1.00	
		O		Deduct 0.2 for each starting 50mm area where coating are not removed	Yes/No	1.00	
		S	New part temporary fitment & alignment- Usage of clamps, gaps & flushness check with adjoining parts	Based on judgement - Check for fit & finishing of the panel (Deduct 0.5 for partially process done)	Yes/No	1.00	
		O	Cleaning with degreas	Deduct 0.2 for each zone not cleaned ( Left /	Yes/No	0.50	

			er on all zones correctly on original body		Right Zone of running board)				
B3	WELDING	O	Cleanin g with degreas er on replac ement parts Apply weld thru primer on mating panels		Deduct 0.2 for each zone not cleaned ( Left / Right Zone of running board)	Yes/No	0.50		
		O			Deduct 0.25 any area left	Yes/No	1.00		
		S			Welding current as per sheet thickness, welding wire speed & gas pressure to be around 10-15 L/min, Check on test Pieces (Deduct 0.25 for each operation missing) distance & posture , Angle 65-80 degree				
			S	Setting of mig welding machine		(Deduct 0.25 for each operation missing) distance & posture , Angle 65-80 degree	Yes/No	1.00	
			S	Handlin g of mig welding torch		(Deduct 0.25 for each operation not done correctly) Deduct 0.5 for each incorrectly placed or incorrect number of welds	Yes/No	0.50	
			O	Plug weld		Deduct 0.5 for each weld not fully welded Deduct 0.25 for diameter larger than 1 1/2 times hole size	As per repair manual	1.00	
			O	Plug weld			Fully Welded	1.00	
			O	Plug weld			Not greater than 1 1/2 times hole size	1.00	
		O	Plug and spot weld -		Deduct 0.5 where panel gap is greater	Panel Gap	1.00		

			except inside		than 0.5mm			
		S	Setting of spot welding machine - Material & thickness setting, Destructive test on similar thickness panel		Peel test (check the panel weld current, weld time and weld pressure 6-8 bar) (Deduct 1 for partially process done) Deduct 0.25 for each weld incorrectly placed or number.	Yes/No	2.00	
		O	Spot weld		Deduct 0.1 for each spot weld burn through	Burn Through	1.00	
		O	Spot weld		Deduct 0.1 for each spot weld where metal is missing	Metal missing	1.00	
		O	Continues weld upper and lower area (Left & Right side of running Board)		Deduct 0.1 for each 2mm of missing weld or not fully welded	Fully Welded	1.00	
		O	Continues weld upper and lower area (Left & Right side of running Board)		Deduct 0.1 for each weld exceeding 2mm high, and 0,1 extra for every 10mm to high	Max 2mm High	1.00	
		O	Continues weld upper and lower aerea, open after competit		Deduct 0.25 for each 5mm weld not fully penetrated	Proper Penetration	2.00	



			ion (Left & Right side of running Board)						
B4	DRESS/GRIND/SAND/GAPS								
		O	Grinding work & finish		Deduct 0.1 for each 5 mm incorrect grinding finish	Smooth finish		1.00	
		O	Spot weld & mig weld burr on inner & outer surface		Deduct 0.25 for each burr found after finish	No welding burr		1.00	
		O	Paint edges feathered, sanded with P 120 or finer		Deduct 0.1 for each 25 mm line not sanded	Yes / No		1.00	
B5	PANEL GAPS & ADDITIONAL DAMAGE								
		O	Front side door and RR side door gap & flush as per specifications		Deduct 0.2 for each incorrect Gap	As per specification		1.00	
		O	Side panel, doors and hinges has no additional damage		Deduct 0.2 for each damage	Yes/No		1.00	
<b>TOTAL</b>								<b>40</b>	
(NAME & SIGN OF JURY MEMBER)					(NAME & SIGN OF JURY MEMBER)				

<b>Module C (Panel Repair)</b>				Date				
<b>Participant Name :</b>				Duration: 1.5 hours				
<b>Company Name :</b>				Total. Marks: 25				
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score	Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Obj Only)	Max Mark	Marks Awarded
D1	Panel Repair 1: Big dent	S	Use of relevant safety items - Gloves, ear plugs, eye-goggles, dust mask, safety shoes		Deduct 0.2 for every item if not used	Yes/No	1.00	
		S	Confirmation of damaged area - Check Visually in diff. light angle, usage of hands & jigs (Scale) for accurate judgement		Deduct 0.2 for every check if not Perform	Yes/No	0.60	
		S	Usage of hammer on the panel		high points judgement, hammer force, even beating		1.00	
		S	Usage of dolly		dolly placement, force, size & profile as per damage		1.00	
		S	Confirmation of work after beating - checking with hands		Deduct 0.2 for every check if not Perform	Yes/No	0.40	

		& jigs				
O	Paint removal - area & tool used (Single action sander)		Usage of Single action sander, Paper 80 Coarse cut	80 Coarse cut	0.50	
S	Shrinkage process		method used, identification of points & surface treatment		2.00	
O	Panel has the original contour and shape. No. 1 Template (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance, damage or deep file marks	tolerance: $\pm 1$ mm	0.50	
O	Panel has the original contour and shape. No. 2 Template (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance, damage or deep file marks	tolerance: $\pm 1$ mm	0.50	
O	Panel has the original contour and shape. No. 3 Template (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance, damage or deep file marks	tolerance: $\pm 1$ mm	0.50	
O	Panel has the original contour and shape. No. 4 Template (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance, damage or deep file marks	tolerance: $\pm 1$ mm	0.50	
O	Panel has the original contour and shape. No. 5 Template (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance, damage or deep file marks	tolerance: $\pm 1$ mm	0.50	
O	Panel has the original contour and shape. No. 6 Template (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance, damage or deep file	tolerance: $\pm 1$ mm	0.50	

			the end)		marks			
		O	Panel has the original contour and shape. No. 7 Template (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance, damage or deep file marks	tolerance: ±1mm	0.50	
		S	Exact repaired area -		no unnecessary scratches (Deduct 0.1 for each scratches)	Yes/No	0.50	
		O	Metal finish is good		Deduct 0.2 for each 50 mm square not sanded (No ED coat, Paint inside featheredging area)	P80 to P120	1.00	
		O	Paint edge feather is good		sandpaper grit, DA sander usage, width of feather edge	P80 to P120 / P180	0.20	
		S	Panel is smooth - no evident high areas		Score will be measured based on judgement		2.00	
		S	Panel is smooth - no evident low areas		Score will be measured based on judgement		2.00	
D2	Panel Repair 2: Small damage on Press Line	S	Line repair process		washer welding usage, pulling force & points		2.00	
		S	Usage of dent puller		m/c setting, Check on test piece, no. holes made(deduct 0.1 for each hole & Process skip)		0.50	
		O	Panel has the original contour and shape. No. 1 (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance	tolerance: ±1mm	0.40	

		O	Panel has the original contour and shape. No. 2 (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance	tolerance: ±1mm	0.40	
		O	Panel has the original contour and shape. No. 3 (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance	tolerance: ±1mm	0.40	
		O	Panel has the original contour and shape. No. 4 (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance	tolerance: ±1mm	0.40	
		O	Panel has the original contour and shape. No. 5 (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance	tolerance: ±1mm	0.40	
		O	Panel has the original contour and shape. No. 6 (By scale) (Check at the end)		Deduct 0.1 for every 1 mm exceeding tolerance	tolerance: ±1mm	0.40	
		O	No damage due to electrical shrinking		Deduct 0.1 for each dent or hole	Yes/No	0.40	
		O	Metal finish is good		Deduct 0.2 for each 50 mm square not filed or sanded (No ED coat, Paint inside featheredging area)	P80 to P120	0.80	
		O	Paint edge feather is good		sandpaper grit, DA sander usage, width of feather edge	P80 to P120 / P180	0.20	
		S	Panel is smooth - no evident high areas		Score will be measured based on judgement		2.00	
		S	Panel is smooth - no		Score will be measured		1.00	

			evident low areas		based on judgement			

(NAME & SIGN OF JURY MEMBER)

(NAME & SIGN OF JURY MEMBER)

SAMPLE

## Section - D

### D. Infrastructure List

<b>Task A – Diagnosis and Measurement</b>	
<b>Item Description</b>	<b>Number per competitor</b>
Crash Repair System – Car-o-liner	1
Vision 2 software	1
Printer	1
Torque wrench	1
General Tool Trolley	1
PPE	

<b>Task B – Non-Structural Part Replacement</b>	
<b>Item Description</b>	<b>Number per competitor</b>
Side sill panel LH / RH	1
Spot Welding Equipment	1
Air pressure line with FRL - required pressure 6 to 8 Bar	2 lines for each work station
Zinc Primer	1
MIG Welding equipment	1
Argo shield gas Or CO2 gas cylinder with Pressure Regulator	1
MIG Welding Wire reel - 0.6 or 0.8 MM	1
Single Action Sander	1 for each work station
Air Saw	1 for each work station
Air Grinder	1 for each work station
Drill Machine - 8 mm Drill bit	1 for each work station
Air blow gun	1 for each work station
Belt sander	1 for each work station
Grip plier	2 for each work station
General tool trolley	1 for each work station
Work Bench with bench Vice	1 for each work station
Sanding discs (P80,P120,P180)	
Cleaning clothes	
PPE – Auto darkening helmet, Leather gloves, welding apron, Ear Plug, Safety Goggles, Face guard	1 Set for each work station
Electric Supply for spot welding	3 phase - 32 AMP

<b>Task C – Panel Repair</b>	
<b>Item Description</b>	<b>Number per competitor</b>
Door Panel	1 panel for each candidate
Panel stand or work bench	1 for each work station
Panel Repair system - Dent Puller	1 for each work station
Panel shrinking System	1 for each work station
Single action sander	1 for each work station
Double Action sander	1 for each work station
Air blow Gun	1 for each work station
Dolly Set	1 for each work station
Panel beating Hammer Set	1 for each work station
Plastic mallet	1 for each work station
Pick Hammer	1 for each work station
Sanding discs (P80,P120,P180)	
Cleaning clothes	



## Section – E

### E. Instructions for candidates

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1. Supplied equipment and materials should be checked by the competitor to ensure is Satisfactory, prior to starting the task
2. Competitors will lose marks for any damage caused to equipment or components where it is a result of competitor error
3. Competitors will lose marks for non-compliance with health and safety rules and regulations and may be stopped from proceeding if they put themselves or others at risk of injury or risk damage to vehicles, tools or equipment.
4. Competitors are also assessed on efficient use of materials and will lose marks for excessive wastage

## Section – F

### F. Health, Safety, and Environment

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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.
4. Competitors can lose marks or excluded from the competition (as per Competition Rules & Health and Safety documents) if they are identified working in an unsafe manner or create an unsafe workplace condition.
5. Examples of unsafe practices include:
  - Not wearing the appropriate personal safety equipment, safety glasses, gloves, hearing protection, etc.
  - Not correctly positioning screens when MIG welding or grinding.
  - Not using fume/smoke extractor.
  - Realigning without safety cable correctly fitted.
  - Poor/unsafe housekeeping.
  - Endangering yourself or others.
6. Reckless or accidental damage caused to equipment or vehicle while performing repairs could result in loss of marks in any or all categories.