



Auto3P's Refinish Cost Calculation





Preface

Refinish cost calculations are performed according to data stored in the relevant database developed by MRM for this purpose.

Refinish costs are calculated for each part according to the amount of time allowed for the preparation procedures and the actual refinish procedure, as well as the cost of materials utilized.

Refinish rate is based on the painted part size

Automatic calculation will be executed by the system for each replaced or repaired part.

The global refinish rates and paint unit costs are defined within the MultiCat Configuration and as an integral part of the estimating damage system.



Refinish rate calculation factors

Paint calculation is based upon the vehicle surface shell in a global calculus of all painting cost, fixed cost and variable cost.

Refinish rate calculation factors:

- Preparation cost
- Materials cost
- Amount of working hours
- Drying facility cost
- Additional cost
- Paint type
- Refinish process type



How it is calculated?

Refinish procedures are automatically configured within the MultiCat parts selection screens as follows:

- **Part replace** – refinish procedure for a new part
- **Part repair** – refinish procedure for repaired part according to it's damaged surface measures:
 - up to 50%.
 - above 50%.

How it is calculated?

Surface measures examples :

Front fender 35-50 dzm



Hood 120-200 dzm





Refinish Cost Calculation Principles

Refinish Type and Grade

Determining global labor rate tariff (configured by the user)

Determining refinishing type options:

- Single stage
- Double stage
- Multi stage (additional "pearl" component)

Determining the refinish grades for each part*:

- New part replacement – in any new part
- Repair under 50%*.
- Repair above 50%*.

* in any repaired part according to the repairing surface ratio.

Refinish Cost Calculation Principles

Repaired part refinish:

Up to 50% paint job after tinsmith repair less than half of the part surface.



Above 50% paint job after tinsmith repair more than half of the part surface.

New part refinish:

For new replaced parts - refinish rate calculation is set automatically for two-sides surface painting - in cases of hoods, tailgates and doors.



Refinish Cost Calculation Principles

Global Services - Preparations

The preparation phase is the initial step of preparing the vehicle for painting. The following actions on this phase are:

- Washing and cleaning the vehicle as preparation for painting.
- Time for mixing the paint, instruments preparations.
- Putting the vehicle in the drying facility.

The constant time parameter for vehicle preparations before painting is 0.7 hour

Refinish Procedures

Two-sides surface painting



Cleaning and polishing the part surface



Preparations and masking before painting





Refinish Cost Calculation variables

Materials:

Materials cost related to the refinish grade and surface area multiplied by the cost of materials used during the refinish procedures for each surface unit.

To facilitate the paint calculation we opened the material calculation mechanism based on cost of materials and the painted surface.



Refinish Cost Calculation variables

Materials:

Sand paper

Polishing disc

Body Putty

Primer

Filler

Hardener

Paint

Clear coat lacquer

Thinner

Masking sheet

Masking tape



Refinish Cost Calculation variables

Drying facility:

Using of drying facility is related to the overall cost of the facility, the cost of fuel or electricity, the number of drying stages and the drying time of each stage. Each color of the vehicle has to be dried separately.

The estimated drying time should take about half an hour but could be also prolonged up to one hour.



Refinish Cost Calculation variables

Drying facility costs sample:

The below table demonstrates drying facility costs calculations – It is calculated for 7 years (84 month), 80 drying each month. The cost includes financing for 7 years loan. Set of filters is calculated for 500 dryings. One Drying Facility Cost is calculated by the sum of Qty x Cost of each parameter.

Constant cost per paint

Drying facility	Cost	Cost per car paint
Paint drying room	€ X	
Financing	€X	
Total cost	€ X	€ X
Diesel	€ X	€ X
Filter	€ X	€ X
Total cost		€ X



Refinish Cost Calculation variables

Refinishing type

There are 3 refinishing types:

Single stage: single paint layer, includes the paint factor with varnish

Two stage: First painting stage – Paint only, second stage – varnish (2 dryings included)

Multi stage: Additional powder material to the paint containing the "pearl" component.

Painting time per 1 dzm

- Masking time - 4 seconds
- Preparations time for part painting – 14 seconds
- Painting time – 12 seconds



Refinish Cost Calculation Example

Group	Part	Overcoat		< 50%		> 50%		New part	
		Time	Units	Time	Units	Time	Units	Time	Units
Mini	Front Bumper	0.8	64.0	1.4	79.0			1.0	95.0
	Front Grille	0.4	5.0	0.8	6.0			0.8	7.0
	Hood	0.8	107.0	1.8	134.0	2.8	158.0	1.8	160.0
	Front Fender	0.5	36.0	1.0	45.0	1.5	53.0	1.1	53.0
	Front Door	0.7	67.0	1.3	84.0	2.1	100.0	1.3	101.0
Medium	Front Bumper	0.7	52.0	1.3	66.0			1.1	82.0
	Front Grille	0.4	6.0	0.9	7.0			0.6	9.0
	Hood	1.0	139.0	2.1	174.0	3.4	206.0	2.2	209.0
	Front Fender	0.5	38.0	1.0	47.0	1.5	56.0	1.0	57.0
	Front Door	0.7	70.0	1.4	88.0	2.1	104.0	1.4	105.0