

## Marking calculation

- 2 possible cases:
  - A – Supplier marking represented by a large majority: E.g.: Boomerang, Anda, PF, etc.
  - B - Simple marking

### A. Supplier marking

This is identical marking for a set of variants.

The supplier gives us the marking codes linked to different techniques.

Each code corresponds to a specific price calculation.

Each product can be linked to one or several codes.

In this type of marking, there will always be a neutral price and a price corresponding to the code.

### B. “Simple” marking

Here a marking technique is directly associated with a product variant.

Each product corresponds to a unique price calculation.

Here there are 3 possible hypotheses for the price calculation.

1. The supplier gives us an unmarked product price and a marking price which is added to the price of the unmarked product.
2. The supplier gives us an unmarked product price and a marked product price which replaces the price of the unmarked product.
3. The supplier only gives us the price of the marked product.

NB: In all cases, the information relating to the product will be entered in import tables (Products and Variants) and (Variant Profiles)

### Calculation of the supplier marking price

*The data sent by the supplier (relating to marking)*

Data given by the supplier (e.g. Boomerang). I have only taken the data needed to calculate the marking

A	B	C	D	E	F	G	H
Ref_Produit	Nom_Produit	Marquage FR	CodeTarif	Ligne	QMin	QMax	Prix Revendeur
			échantillon	0	1	5	3.69
ACC1408-22	TUBE - Chargeur	T4/Q/10x50 mm. L1/M/10x50 mm. Manutention: M1+M1. Remballage: inclus	1	1	6	249	3.32
			1	2	250	499	3.16
			1	3	500	999	3
			1	5	1000	99999	2.85

<b>Tampographie - Frais techniques : Plaque et film 40€/coul - Réassort 25€/coul - Bat réel 35€/coul</b>								
Code marquage	Nombre de couleurs	<100	<250	<500	<1000	<2500	<5000	>=5001
T1	1	65	75	80	0,13	0,10	0,08	0,07
T1	2	115	135	160	0,25	0,20	0,15	0,14
T1	3	155	215	270	0,37	0,27	0,23	0,22
T1	4	190	250	320	0,58	0,53	0,49	0,39
T1	quadri	250	305	390	0,72	0,56	0,51	0,41
T2	1	70	80	90	0,16	0,13	0,11	0,10
T2	2	120	140	175	0,28	0,23	0,18	0,17
T2	3	160	220	285	0,40	0,30	0,26	0,25
T2	4	195	255	335	0,61	0,56	0,52	0,42
T2	quadri	255	310	405	0,75	0,59	0,54	0,44
T3	1	75	85	105	0,16	0,13	0,10	0,09
T3	2	130	155	180	0,35	0,27	0,22	0,20
T3	3	190	225	260	0,49	0,39	0,34	0,32
T3	4	270	295	420	0,92	0,82	0,71	0,59
T3	quadri	305	350	460	1,02	0,92	0,83	0,69
T4	1	85	95	125	0,19	0,16	0,13	0,12
T4	2	140	165	200	0,38	0,30	0,25	0,23
T4	3	200	235	280	0,52	0,42	0,37	0,35
T4	4	280	305	440	0,95	0,85	0,74	0,62
T4	quadri	315	360	480	1,05	0,95	0,86	0,72
Maintenance selon code tarif *								
<b>Gravure laser - Programme 30€ - Réassort 20€ - Bat réel 35€ - Bat photo 10€</b>								
Code marquage	Nombre de couleurs	<100	<250	<500	<1000	<2500	<5000	>=5001
L1	*	65	0,36	0,32	0,28	0,27	0,26	0,24
L2	*	85	0,64	0,6	0,56	0,55	0,54	0,52
Maintenance selon code tarif *								

Si votre logo contient du rouge un frais d'aplat de 30€ sera facturé

Options:  
Marquage sur clip + 0,02€

Options en supplément du marquage :  
Finition oxydée + 0,14€  
Personnalisation individuelle + 0,12€

### Import tables

Supplier marking: It is a simple table matching the codes given by the supplier with existing marking techniques

[illegible]

**Variant marking:** each variant contains the specific marking features and linked code.

	A	B	C	D	E	F	G	H	I	J	K
1	ref_fournisseur	marquage_fournisseur	cle	position	commentaire_fr	nb_couleurs_n	largeur_max	longueur_max	quadrichromie	code_option	code_option
2	ACC1408-22-A	L1		1 158 - produit		1	10	50		M1	M1
3	ACC1408-22-A	T4		2 158 - produit			10	50	oui	M1	M1
4	ACC1408-22-BL	L1		1 158 - produit		1	10	50		M1	M1
5	ACC1408-22-BL	T4		2 158 - produit			10	50	oui	M1	M1
6	ACC1408-22-N	L1		1 158 - produit		1	10	50		M1	M1
7	ACC1408-22-N	T4		2 158 - produit			10	50	oui	M1	M1
8	ACC1408-22-V	L1		1 158 - produit		1	10	50		M1	M1
9	ACC1408-22-V	T4		2 158 - produit			10	50	oui	M1	M1
10	ACC1504-A	L1		1 158 - produit		1	50	60		M1	M1

Here the product has 4 variants. Each variant can be marked according to 2 marking techniques.

**Supplier marking profile:** contains the marking prices corresponding to the code.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	marquage_fournisseur	condition	quantite_1	prix_achat_1	quantite_2	prix_achat_2	quantite_3	prix_achat_3	quantite_4	prix_achat_4	quantite_5	prix_achat_5	quantite_6	prix_achat_6	quantite_7	prix_achat_7	prix_fixe_1	frais_techniques_inclus
2	L1		1 >>>65	100	0,36	250	0,32	500	0,28	1000	0,27	2500	0,26	5000	0,24	30	oui	
3	L2		1 >>>85	100	0,64	250	0,6	500	0,56	1000	0,55	2500	0,54	5000	0,52	30	oui	
4	T4	nb_couleurs==2	1 >>>140	100 >>>165		250 >>>200		500	0,38	1000	0,3	2500	0,25	5000	0,23 >>>40*nb_couleurs	oui		
5	T4	nb_couleurs==3	1 >>>200	100 >>>235		250 >>>280		500	0,52	1000	0,42	2500	0,37	5000	0,35 >>>40*nb_couleurs	oui		
6	T4	nb_couleurs==4	1 >>>280	100 >>>305		250 >>>440		500	0,95	1000	0,85	2500	0,74	5000	0,62 >>>40*nb_couleurs	oui		
7	T4	quadrichromie	1 >>>315	100 >>>360		250 >>>480		500	1,05	1000	0,95	2500	0,86	5000	0,72	40	oui	

This table contains the marking calculations applicable to each marking technique

The marking prices are divided into 2 groups: The variable price (price calculated per unit) and the fixed price which is added to the total marking price.

Each price family can either dynamic or static. There will therefore be 4 types of prices to calculate the marking:

- Static variable price
- Dynamic fixed price
- Static fixed price
- Dynamic fixed price

The dynamic price is identified in the table by >>> symbols

When the price is static, the basic rule defined by the system applies:

- For fixed prices, the price is as it is
- For variable prices: the basic rule is quantity x unit price of the corresponding segment

When the price is dynamic, it is necessary to apply the calculation behind the >>> symbols as it is written.

With all this information, it is therefore possible to calculate the marking price (excluding options for the time being)

The marking price will therefore be in all cases:

- Variable price + Fixed price

In the boomerang example, the charger may be marked with a laser engraving (L1) or 4 colour Pad Printing (T4/Q)

This will result:

For the laser engraving (L1)

- For a quantity < 100:  $65 + 30 = \text{€}95$  ex. VAT
- For 100 units:  $100 \times 0.36 + 30 = \text{€}66$  ex. VAT
- For 250 units:  $250 \times 0.32 + 30 = \text{€}110$  ex. VAT ...

For Pad Printing (T4)

For this technique, it is observed that the condition column is filled.

Here the product can be marked with four-colour pad printing. Therefore, the corresponding calculation line will be taken.

The calculation is therefore as follows:

- For a quantity < 100 units:  $315 + 40 = \text{€}355$  ex. VAT
- For a quantity between 100 and 250 units:  $360 + 40 = \text{€}400$  ex. VAT
- For a quantity between 250 and 500 units:  $480 + 40 = \text{€}520$  ex. VAT
- For 500 units:  $500 \times 1.05 + 40 = \text{€}565$  ex. VAT
- For 1000 units:  $1000 \times 0.95 + 40 = \text{€}990$  ex. VAT ...

For the options, 2 additional tables must be added

Options are additional costs excluding marking which must be entered into the calculation of the final cost.

E.g.: Handling

Option table: Contains the names of the different options

A	B
code_option	nom_fr
M1	manutention
M2	manutention

Option profile table: Contains the price calculations for the options

	A	B	C	D
1	code_option	condition	quantite_1	prix_achat_1
2	M1		1	0,05
3	M2		1	0,1

As with the marking prices, option prices can be fixed, variable, dynamic or static.

In the example here, the M1 option is applied twice to the product:

The result is:

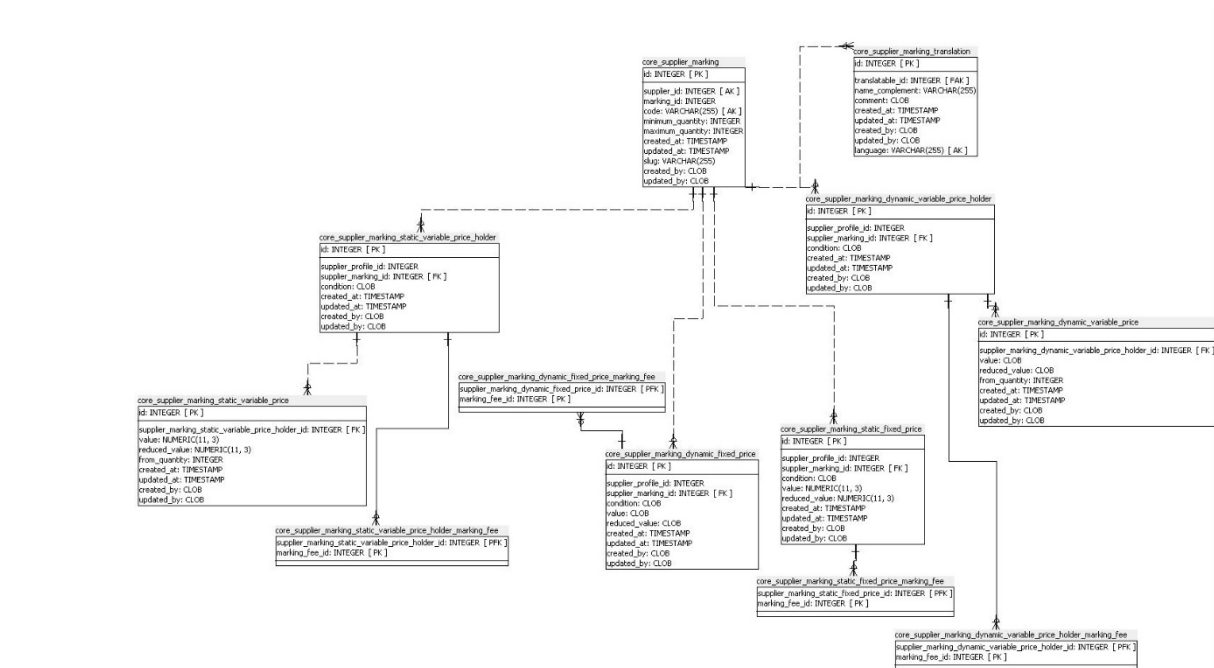
Cost of the option = quantity x price x 2

The final result will be:

Total cost of the product = unmarked Price + Cost of marking + Cost of the option

## Storage of data in our base

Below is the basic relational data diagram



## Use of API keys

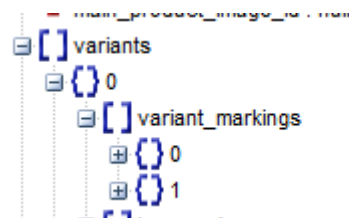
Here we are going to look at the use of different keys to calculate marking.

Key



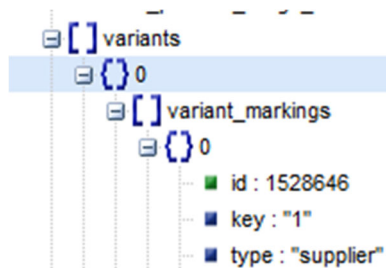
This key can be the true or false value. It indicates if the product will receive a marking or not.

All the keys relating to the marking are found in variant\_marking



(Screenshot)

The numbers indicate the number of marking variants available for each marking. In the example below, there are 2 variants.

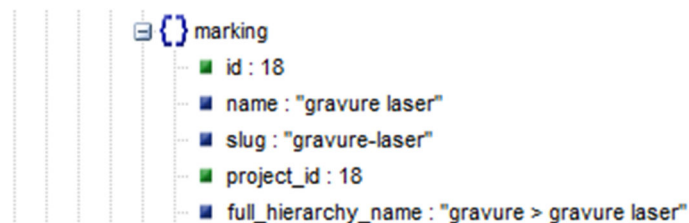


Id: indicates the id of the marking variant. This id is unique in the whole database.

Key: this is a unique key that is used to distinguish each marking possibility within a variant. It tends to be used during indexing. When using the API, it is preferable to refer to the variant number (as indicated in the previous paragraph).

type: The type of marking. There are 2 sorts: “supplier” for a supplier mark or “simple” for simple marking

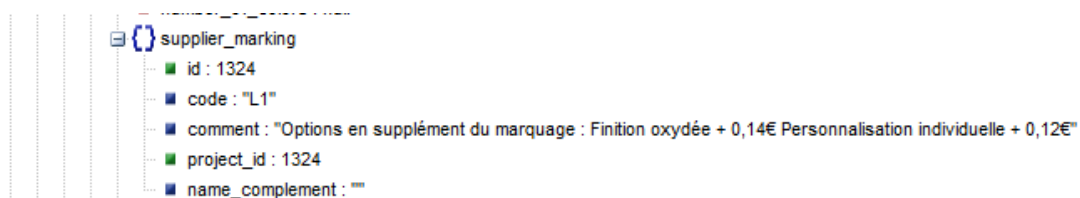
Here we are going to look at the case of “supplier” marking



The marking key indicates the marking technique used in the marking variant.

This technique always has the same id in our database for all suppliers.

Here id: 18 will always correspond to the laser engraving.



The supplier\_marking key is the marking code used by the supplier.

Here, id 1324 will always correspond to the L1 code at the boomerang supplier (our example).

And consequently, the L1 code will correspond to the laser engraving (the 2 keys being found in the same “variant\_marking”)

### How to calculate?

As we have seen, marking cost = variable cost + fixed cost

We have also seen that each price can be static or dynamic.

We are therefore going to use price and price\_holders keys (all prices)

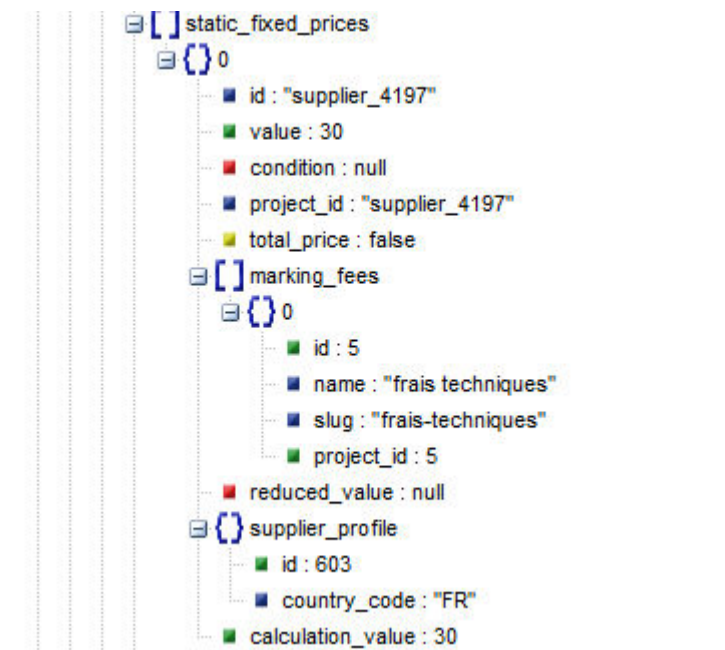
i.e.:

- Dynamic\_variable\_price\_holders
- Static\_variable\_price\_holders
- Dynamic\_fixed\_prices
- Static\_fixed\_prices

Variant\_marking: {0}

#### Search for and calculation of the fixed cost (fixed price keys)

Here, there is no calculated price, the dynamic\_fixed\_prices key is therefore empty



The static\_fixed\_prices key contains all static fixed prices (not calculated)

Here there is only 1 fixed price. Its value is 30 (value key)

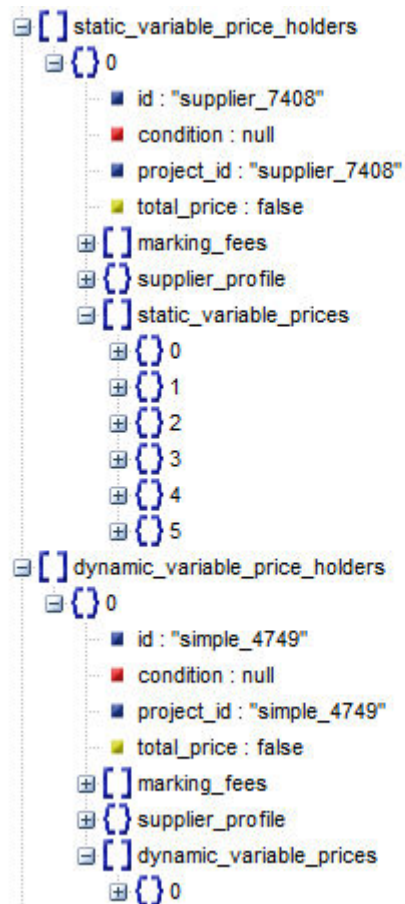
The fixed part of our marking price is therefore €30

#### Search for and calculation of the variable price

Here we are not going to work on a price but on a set of prices (price\_holders)

A price will be linked to each price range. It is therefore necessary to retrieve the whole price and then determine which price to use, depending on the chosen quantity.

Comment: for a given quantity, a price cannot be both static and dynamic.



In the example below, there are 6 static prices and a dynamic price

Reminder: to calculate the marking price. The quantity x value formula will be applied for a static price.

For a dynamic price, the formula found in the value will be used (not multiplied by the quantity)

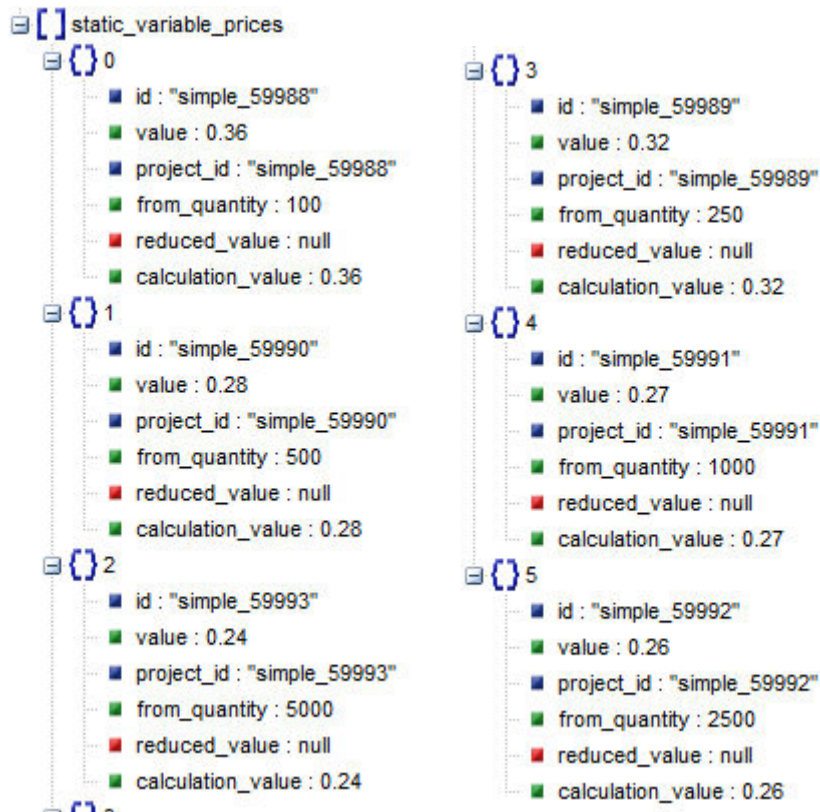
static\_variable\_prices key

Important: prices are not ranked in ascending order.

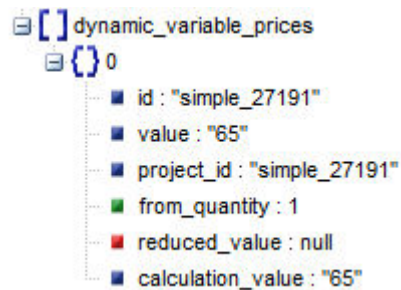
In this example, we therefore have:

For static prices:





For dynamic prices



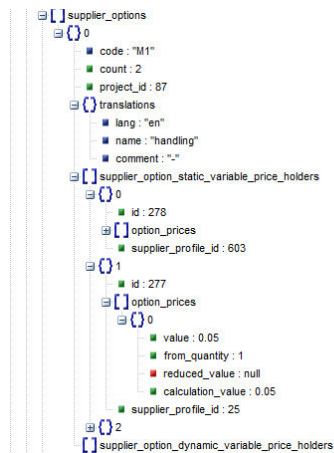
For this marking technique, we therefore obtain:

- From 1 unit, a dynamic price of €65 (here given that there is no calculation, it is a flat-rate price)
- From 100 units, a static price of 0.36 / unit
- From 250 units, a static price of 0.32 / unit
- From 500 units, a static price of 0.28 / unit
- From 1000 units, a static price of 0.27 / unit
- From 2500 units, a static price of 0.26 / unit
- From 5000 units, a static price of 0.24 / unit

## Calculation of pricing options

To complete the marking calculation, you just have to calculate the cost of the options

The different keys are found in supplier\_option



In it is the option code, the name of which is in translation and prices in:

supplier\_option\_static\_variable\_price\_holders and  
supplier\_option\_dynamic\_variable\_price\_holders **Important: when the supplier has several profiles, they all appear. It is therefore necessary to take the right supplier\_profil\_id. It should be corrected in another API version. The right profile is found in the section just below supplier\_profiles**

Here only the supplier\_option\_static\_variable\_price\_holders section contains values.

You can also see that the M1 option is attached twice to the variant\_marking (count: 2)

Options will therefore cost  $0.05 \times \text{quantity} \times 2$

All the necessary information is therefore brought together to complete the cost of marking.

## Calculation of the simple marking price

### *Import tables*

Variant marking: each variant contains the specific marking features and linked marking.

Variant marking profile: Contains the price calculation for each variant

*Case no. 1: The supplier gives us an unmarked product price and a marking price which is added to the price of the unmarked product.*

No special indication in the import tables

For the calculation, apply the same rules as for supplier marking (e.g. Xoopar)

*Case no. 2: The supplier gives us an unmarked product price and a marked product price which replaces the price of the unmarked product.*

The variant marking profile table contains a “total\_price” column where yes is entered for the corresponding variant.

Here the price of the marked product simply replaces the price of the unmarked product.

*Case no. 3: The supplier only gives us the price of the marked product.*

In this case, retrieve the price in the variant profile table

The variant marking table will in this case contain a column called “basic\_price” where yes is entered for the corresponding variant.

It is also possible to add marking options to a simple marking.

```

    graph TD
      core_variant_simple_marking_static_price_holder_fee[core_variant_simple_marking_static_price_holder_fee  
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variant_simple_marking_static_variable_price_holder_id: INTEGER [FK]  
marking_fee_id: INTEGER [FK]]
      core_variant_simple_marking_static_variable_price[core_variant_simple_marking_static_variable_price  
id: INTEGER [PK]  
variant_simple_marking_static_variable_price_holder_id: INTEGER [FK]  
value: NUMERIC(11, 3)  
reduced_value: NUMERIC(11, 3)  
from_quantity: INTEGER  
created_at: TIMESTAMP  
updated_at: TIMESTAMP  
created_by: CLOB  
updated_by: CLOB]
      core_variant_simple_marking_dynamic_variable_price[core_variant_simple_marking_dynamic_variable_price  
id: INTEGER [PK]  
variant_simple_marking_dynamic_variable_price_holder_id: INTEGER [FK]  
value: CLOB  
reduced_value: CLOB  
from_quantity: INTEGER  
created_at: TIMESTAMP  
updated_at: TIMESTAMP  
created_by: CLOB  
updated_by: CLOB]
      core_variant_simple_marking_dynamic_variable_price_holder[core_variant_simple_marking_dynamic_variable_price_holder  
id: INTEGER [PK]  
supplier_profile_id: INTEGER  
variant_simple_marking_id: INTEGER [FK]  
condition: CLOB  
total_price: BOOLEAN  
created_at: TIMESTAMP  
updated_at: TIMESTAMP  
created_by: CLOB  
updated_by: CLOB]
      core_variant_simple_marking_dynamic_variable_price_holder_fee[core_variant_simple_marking_dynamic_variable_price_holder_fee  
variant_simple_marking_dynamic_variable_price_holder_id: INTEGER [FK]  
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marking_fee_id: INTEGER [FK]]
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id: INTEGER [PK]  
supplier_profile_id: INTEGER  
variant_simple_marking_id: INTEGER [FK]  
condition: CLOB  
total_price: BOOLEAN  
value: CLOB  
reduced_value: CLOB  
created_at: TIMESTAMP  
updated_at: TIMESTAMP  
created_by: CLOB  
updated_by: CLOB]
      core_variant_simple_marking_supplier_profile[core_variant_simple_marking_supplier_profile  
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supplier_profile_id: INTEGER [FK]]
      core_variant_simple_marking_translation[core_variant_simple_marking_translation  
id: INTEGER [PK]  
translatable_id: INTEGER [FK]  
comment: CLOB  
created_at: TIMESTAMP  
updated_at: TIMESTAMP  
created_by: CLOB  
updated_by: CLOB  
language: VARCHAR(255) [AK]]
      core_variant_simple_marking_static_fixed_price[core_variant_simple_marking_static_fixed_price  
id: INTEGER [PK]  
supplier_profile_id: INTEGER  
variant_simple_marking_id: INTEGER [FK]  
condition: CLOB  
total_price: BOOLEAN  
value: NUMERIC(11, 3)  
reduced_value: NUMERIC(11, 3)  
created_at: TIMESTAMP  
updated_at: TIMESTAMP  
created_by: CLOB  
updated_by: CLOB]
      core_variant_simple_marking_static_fixed_price_marking_fee[core_variant_simple_marking_static_fixed_price_marking_fee  
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marking_fee_id: INTEGER [FK]]

      core_variant_simple_marking[core_variant_simple_marking  
id: INTEGER [PK]  
marking_position_id: INTEGER  
variant_id: INTEGER [AK]  
marking_id: INTEGER  
length: NUMERIC(11, 3)  
minimum_length: NUMERIC(11, 3)  
maximum_length: NUMERIC(11, 3)  
free_entry_length: BOOLEAN  
width: NUMERIC(11, 3)  
minimum_width: NUMERIC(11, 3)  
maximum_width: NUMERIC(11, 3)  
free_entry_width: BOOLEAN  
squared_size: NUMERIC(11, 3)  
minimum_squared_size: NUMERIC(11, 3)  
maximum_squared_size: NUMERIC(11, 3)  
free_entry_squared_size: BOOLEAN  
diameter: NUMERIC(11, 3)  
minimum_diameter: NUMERIC(11, 3)  
maximum_diameter: NUMERIC(11, 3)  
free_entry_diameter: BOOLEAN  
number_of_colors: INTEGER  
minimum_number_of_colors: INTEGER  
maximum_number_of_colors: INTEGER  
free_entry_number_of_colors: BOOLEAN  
number_of_positions: INTEGER  
minimum_number_of_positions: INTEGER  
maximum_number_of_positions: INTEGER  
free_entry_number_of_positions: BOOLEAN  
number_of_logos: INTEGER  
minimum_number_of_logos: INTEGER  
maximum_number_of_logos: INTEGER  
free_entry_number_of_logos: BOOLEAN  
minimum_quantity: INTEGER  
maximum_quantity: INTEGER  
key: VARCHAR(255) [AK]  
created_at: TIMESTAMP  
updated_at: TIMESTAMP  
created_by: CLOB  
updated_by: CLOB  
full_color: BOOLEAN  
included_in_variants: BOOLEAN]

      core_variant_simple_marking --> core_variant_simple_marking_static_price_holder_fee
      core_variant_simple_marking --> core_variant_simple_marking_static_variable_price
      core_variant_simple_marking --> core_variant_simple_marking_dynamic_variable_price
      core_variant_simple_marking --> core_variant_simple_marking_dynamic_variable_price_holder
      core_variant_simple_marking --> core_variant_simple_marking_dynamic_variable_price_holder_fee
      core_variant_simple_marking --> core_variant_simple_marking_dynamic_fixed_price_marking_fee
      core_variant_simple_marking --> core_variant_simple_marking_dynamic_fixed_price
      core_variant_simple_marking --> core_variant_simple_marking_supplier_profile
      core_variant_simple_marking --> core_variant_simple_marking_translation
      core_variant_simple_marking --> core_variant_simple_marking_static_fixed_price
      core_variant_simple_marking --> core_variant_simple_marking_static_fixed_price_marking_fee
  
```

On the API level, it is therefore necessary to identify the following keys:

The calculation settings remain identical. These 2 variables will therefore indicate when and when not to run the calculation, and which price values should be taken.