Sky-Frame
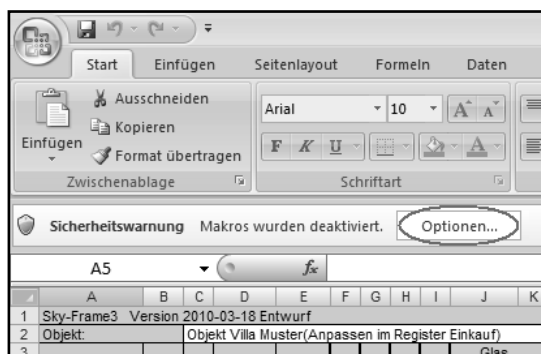
Calculation
Instructions

Basis

The Sky-Frame calculation is based on an Excel spreadsheet that requires Microsoft Excel.

Activate macros

After starting Excel, the **MACROS MUST BE ACTIVATED**! Otherwise the program will not make any automatic calculations.

The macros are activated by clicking on Options / "Activate this feature" in the bar that appears at the top (Security warning: "Macros have been deactivated") after loading the spreadsheet.

If the bar does not appear (since all macros have been previously deactivated) you can change this as follows:
1.) Start Excel (in this case: Version 2007)
2.) Office button (top) / Excel options (bottom right)
3.) Trust setting centre / trust settings
4.) Macro settings / Deactivate all macros with notification

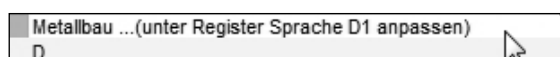After a restart, the security warning bar now appears where the macros can be activated ("Activate this feature").

Header line, currency and language

After starting, the "Project" designation must be entered.
On the top right, choose the technology (Sky-Frame 1-3).
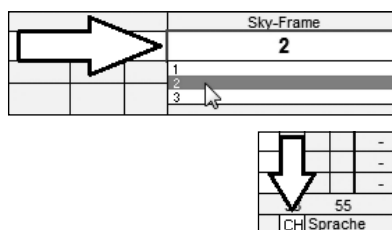
At the bottom right the "Language" and the "Currency" must be selected (Euros / Swiss Francs).

At the bottom of the spreadsheet you will find the following worksheets:

- **ELEMENT**: Start page for entering the elements
- **MONTAGE:** (ASSEMBLY) Define hourly rates, risk+profit, connections and other costs
- **OPTION**: Template page for lines of text, which can be calculated under "MONTAGE" (assembly)
- **OFFERT 1-5**: Result output / summary of calculated quotation with various displays
- **SPRACHE**: Language translation tables. Your "company name" should be entered at the top!
- **KALKSCHEMA**: Derivation of price calculation
- **GLAS**: Overview of glasses (Ug, Lt, g, weight, construction)
- **Uw**: Calculation of the heat transfer coefficient overall window, with selectable glass edge bond

Existing sheets

Sky-Frame

Calculation
Instructions

Item designation, item number and quantity	In the "Customer item designation" you can enter "Kitchen east", for example. Please enter the current (internal) item number under "Item number", and then the "Quantity".

|	
Width	Depending on what has been selected in the middle under "clear size - o/a frame size", enter the overall width of the system (recommendation: select A="o/a frame size" for external dimension input).

Height	Depending on what has been selected in the middle under "clear size - o/a frame size", enter the overall height of the system (recommendation: select "o/a frame size"). Here too, the frame profiles will also be added to the "clear size" for the height.

|	
Number of tracks	You have the choice of 2, 3 or 4 tracks (depending on the technology).

Labyrinth statics
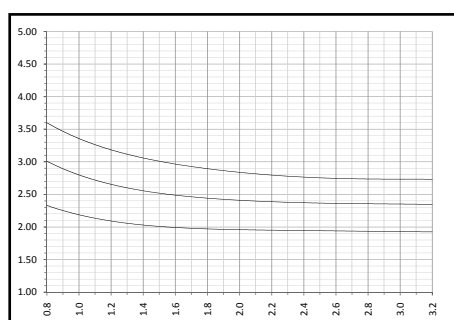
If the cell is empty, normal mullion profiles are calculated. Otherwise the relevant additional cost must be taken into account. The entry options are:

"C" = CFK-reinforced profiles
"S" = steel-reinforced profiles

IMPORTANT:
It is extremely important that you dimension the mullions and glasses yourself beforehand on the basis of the existing wind load!
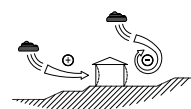
Alarm components
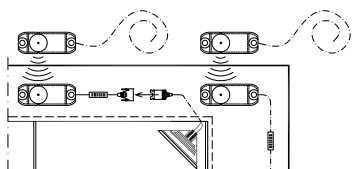
Selectable alarm components are:

"P" = Position monitoring (panel open/closed)
"R" = Deadbolt surveillance (lock open/locked)
"G" = Glass breakage sensor (alarm loop in glass)
"RG" = Deadbolt surveillance and glass breakage sensor

The selected component is calculated over the entire element and for the relevant fields.

Sky-Frame

Calculation
Instructions

**Extensible insect screen
+ wall opening with cylinder**
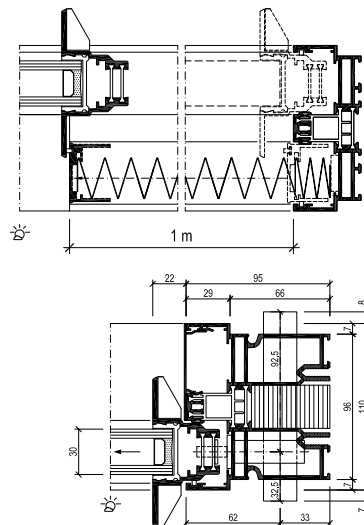
In this column it can be defined whether Sky-Frame Fly = "extensible insect screen" (opening limited to 1m) and / or "wall opening with cylinder" is required.

Possible entries are:

"I"   = extensible insect screen, one side
"II"   = extensible insect screen, both sides
"IZ" = extensible insect screen + opening with 1x cylinder*
"Z"   = wall opening with cylinder*, one side
"ZZ" = wall opening with cylinder*, both sides

The extensible insect screen / cylinder is only possible at the wall side, optionally at one or both sides of the system.

*PLEASE NOTE:
Sky-Frame only supplies the cut-out and the lock, not the cylinder!

Glass thickness surcharge

This is where the glass type is defined: Sky-Frame 2 (3)

<u>"EMPTY CELL" = TSG-H (6/)6/6</u>

(8/)8/8	= TSG-H (8/)8/8
(6/)6/8-2	= TSG-H (6/)6/LSG 8-2
(8/)8/8-2	= TSG-H (8/)8/LSG 8-2
(6/)10/6	= TSG-H (6/)10/6
6/T12-2/6	= TSG-H 6/LSG-HS 12-2/TSG-H 6
6/6/9-P4A	= TSG-H 6/6/LSG 9-P4A
6/T13-P4A/6	= TSG-H 6/LSG-HS 13-P4A

Other types of glass must be inquired about from project to project.
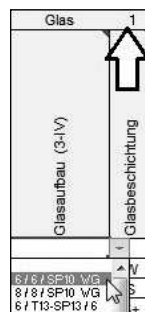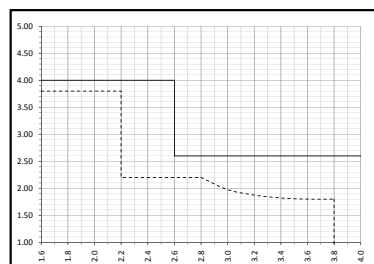
IMPORTANT:
It is extremely important that you dimension the glass yourself beforehand on the basis of the existing wind load!

Glass coating

W   S   S+

An additional sun protection coating can be added by selecting "S" or "S+" for sun protection «Plus».
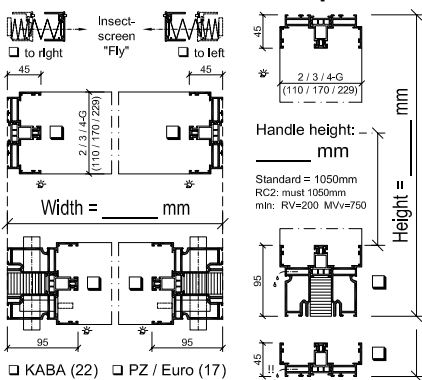**Standard (emtpy) = heat protection ("W")**
Help with the values here is provided in the sheet "GLAS" (= overview of the building physics values).

SKY-FRAME

Sky-Frame

Calculation
**Instructions**

Horizontal profiles

As standard, the Sky-Frame frames have 1x high profile (95/100) at the base at the bottom and one narrow profile (45/51) at the soffit at the top. This is defined by the given factor setting of "1"/"1".

In special cases a narrow (frame) profile can also be selected at the bottom, for example: "2"/"0" or also a high profile at the top: "0"/"2".

As standard, the vertical profiles at the side are arranged in the narrow frame profile (45/51). This configuration can also be changed to one/two high profiles.
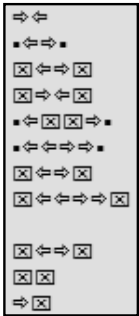

Corners
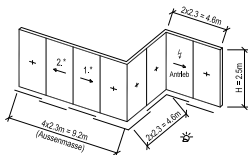
R	flrf
2	ff
L	rf

90° corners can be specified by entering the side (viewed from the outside), i.e. "L" or "R" or by entering "2" for both sides. No distinction is made between internal and external corners. The frames must always be entered up to a corner. If a system has multiple corners, the respective surfaces between them has to be entered as a separate item, for which the mirror-inverted corner must be selected again.

Opening type

The frame processing can be entered directly using the following symbols (viewed from the outside):

"**F**" = Fixed element
"**L**" = Element sliding to the left
"**R**" = Element sliding to the right

The program automatically carries out a plausibility check and displays a symbolic view (from the outside) at the right-hand edge.

The **POCKET DOOR** entry is made by entering an element that can be slid out via the vertical frame profile. For example, "LR" generates a 2-panel sliding door with a station at both sides (=type1, with 2x GRP support). A pocket door with 2 integrated panels (=type2) is entered as "FLRF". The program automatically calculates the number of edges, centre openings and labyrinths, and then works out the correct price.

For example, compare the three bottom entries on the left with the completed order form example in chapter 10.

type1: (L)   type2: (FL)

Sky-Frame

Calculation
Instructions
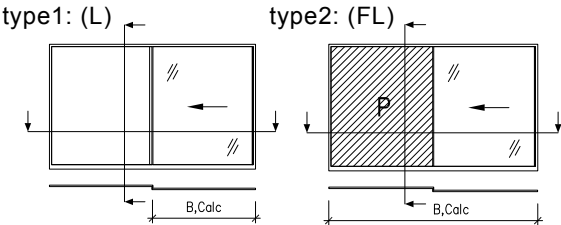
Entry example ELEMENT A complete entry could look as follows:

Item no. Client	item no.	Qty.	width mm	height mm	2=2 tracks 3=3 tracks	Reinforced vertical profiles	alarm components	I=insect screen Z=cylinder	surcharge for laminated safety	surcharge for improved U-Val	zontal pr u	zontal pr s	vertical u	vertical s	90° corner	opening type	side opening	centre opening	labyrinth	surcharge EUR	text	sliding	fixed	total	m2/unit
Kitchen east	1	1	4'100	2'500	2		P	Z			1	1	1	1		rl	2		1			2		2	11.3
Kitchen east	2	1	4'100	2'500	2		P				1	1				lr		1	2			2		2	10.9
Terasse 1.Floor	3	2	8'200	3'400	2	c		I	8/8/8	s	1	1	2			flrf		1	2			2	2	4	29.5
Dining room	4	1	7'800	2'800	2		P		6/6/8-2	s	1	1	2			frlf		2	1			2	2	4	23.3
Dining room	5	1	7'800	2'800	2		P		6/6/8-2	s	1	1				lffr		2	3			2	2	4	23.0
Dining room	6	1	8'000	2'800	2		P		6/6/8-2	s	1	1				llrr		1	4			4		4	23.6
Kitchen west	7	1	4'000	2'800	2				6/6/8-2	s	1	1	2			flrf		1	2			2	2	4	12.1
Kitchen west	8	1	12'500	2'800	3				6/6/8-2	s	1	1	2			fllrrf		1	4			4	2	6	37.2
Examp.10.1.3.1											1	1	2										1	1	-
Entrance nord	9	1	9'200	2'500	2		P		8/8/8		1	1	1		R	flrf		1	2			2	2	4	24.9
Entrance nord	10	1	4'600	2'500	2				8/8/8		1	1			2	ff			1				2	2	13.0
Entrance nord	11	1	4'600	2'500	2				8/8/8		1	1	1		L	rf	1		1			1	1	2	12.7
											1	1	2										1	1	-
											1	1	2										1	1	-
											1	1	2										1	1	-
											1	1	2										1	1	-
											1	1	2										1	1	-
											1	1	2										1	1	-
	total	12																							251.1
		surface E6 EV1 20my					alt. surface				L	=clear size A=o/a frame size							EUR	currency	E	language			

Sky-Frame TOOL Version 2014-10-14 Metallbau ...(unter Register Sprache D1 anpassen)
Project: Example Building, Unit 1, Mainstreet, London

Surface + variant The entry of the required surface treatment is still missing.

As well as the main selection it is also possible to select a second variant, which then appears in the calculation as an additional price (alternative surface).

Following surfaces can be selected: (*for pool / near sea)

-) E6 EV1 (20 my)
-) E6 EV1 (25 my)*
-) Powder coated in accordance with RAL / NCS
-) Powder coat. in acc. with RAL / NCS + with pre-anodizing*
-) Colinal E6 (20 my)
-) Permalux
-) Wood texture
-) Price class 8 = Qualicoat class 2 (highly weather resistant)

Sky-Frame

**Calculation
Instructions**

ASSEMBLY sheet (Montage)	Before the price calculation is performed, the basics for determining the selling price must be defined in the ASSEMBLY (Montage) sheet: - EUR / h for assembly - EUR / h for planning - Risk+profit [%] -> Take flat rate for delivery into consideration! - Purchase discount (on Sky-Frame elements) if applicable
Assembly time + recommendation	An "assembly time recommendation" is automatically displayed, and is based upon empirical values. This is included in the calculation as standard. If you wish to enter "own assembly times", an empty column is provided. This where the total number of hours can be entered (not hours plus or minus)! If the field is left empty, the recommendation is accepted.
Substructure Flat rate for crane	It is possible to enter a price per linear metre for the soffit, the side and the base substructure, which is calculated into the quotation via the scope of the system. The total amount that is needed for crane work for this item/system can be entered as the flat rate for the crane (and other things like the rental for a glass suction system). Including input of alternative currencies (€, £).

EUR/ h installation	85	discount purchase price	5%	Alternativwährung Faktor		1.2	1.21	
EUR/ h planning	85			Alternativwährung Bezeichnung		CHF	CHF	
risk/profit	12%							

item no.	unit	width mm	height mm	m2/unit	opening type	glass weight / unit	frame weight / unit	proposed installation manhours unit	h installation manhours	h planning manhours	EUR substructure top and vertical	EUR substructure bottom	EUR substructure flat rate/ crane	EUR sales price per unit	EUR total	EUR /m2
12						14135	1667							223'700	252'697	
1	1	4'100	2'500	10	⇒⇐	507	87	25.3		5	40	125	200	12'049	12'049	1'176
2	1	4'100	2'500	10	▪⇐⇒▪	489	118	31.1	25	5	40	125	200	12'966	12'966	1'265
3	2	8'200	3'400	28	⊠⇐⇒⊠	1'769	151	47.2		3	40	125	300	28'997	57'994	1'040
4	1	7'800	2'800	22	⊠⇒⇐⊠	1'283	137	42.1		5	40	125	300	22'346	22'346	1'023
5	1	7'800	2'800	22	▪⇐⊠⊠⇒▪	1'266	178	47.0	55	5	40	125	300	25'037	25'037	1'146

SKY-FRAME

Sky-Frame

Calculation
Instructions

Connection and other costs
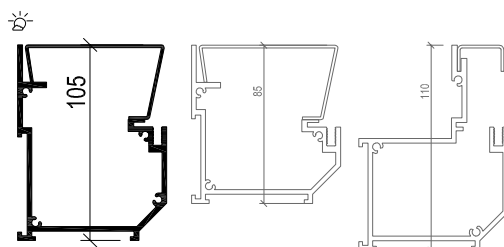
On the right side of the ASSEMBLY sheet there are 15 columns. The first is entitled "Gutter with cover". All values are set to "b".

These 7 columns can be freely defined on the next sheet OPTION. These are surface-related, quantity-related or linear metre-related parameters (for gutters, film, roller shutters for example).

The information comment shows the input values:

"U" = scope (e.g. for silicone joint processing)
"F" = area
"B" = width (of entire system)
"BB" = 2x width (e.g. lower film, 1x internal + 1x external)
"BBH" = 2x width + 1x height
"BBHH" = 2x width + 2x height (= scope)
"BHH" = 1x width + 2x height
"BH" = width + height
"H" = height (of entire system)
"HH" = 2x height (e.g. left+right wall connecting plates)
1250 = 1250 (numeric entry for quantity x price, for example)

Example: "Gutter with cover" x WIDTH "b"

This connection and other costs are listed in the "OFFERT 2" and "OFFERT 3 " result output sheets ("OFFERT 4" up to 10 positions, "OFFERT 5" up to 15 positions on the list).

OPTION sheet

A facility for entering the texts and prices is provided in the top 15 rows (row 1 for column 1 in the ASSEMBLY sheet).

These values are multiplied by the width "b" in the ASSEMBLY sheet, for example.

In the "gutter with cover" example, the unit is "lm" (linear metres), the purchase price is 110 Euro (per linear metre), the planning (per linear metre) is 0.5 hours, 0.1 hours for the production and 0.5 hours for assembly are also incurred per linear metre.

The price (228 Euro/lm) then consists of the purchase, the sum total of all hours x risk+profit.

Sky-Frame

Calculation
Instructions

OFFERT 1 / 2 / 3 output

The calculation is started automatically by clicking on one of the 5 output sheets:

"OFFERT 1"

Summary of all Sky-Frame elements (selling price, without options (see "OFFERT 2")).

"OFFERT 2"

Summary of all options (gutters, film etc.) in accordance with the ASSEMBLY (Montage) + OPTION sheets.
This list must be used in addition to "OFFERT 1".

"OFFERT 3"

Grand total of all Sky-Frame elements and all options, suitable for small orders.

"OFFERT 4"

Summary of all options (gutters, film etc.) in accordance with the ASSEMBLY + OPTION sheets, up to 10 positions.

"OFFERT 5"

Summary of all options (gutters, film etc.) in accordance with the ASSEMBLY + OPTION sheets, up to 15 positions.

Completion of calculation

These lists can be sent directly to the architect or the property developer.

IMPORTANT:
Do not forget to track the status of the order in your "B2B area" after completing the calculation.