



TUTORIAL 2

GENERAL SETTINGS

In the **Project Data** tab click on No.7 Voltage Levels: Code 220 kV, Normal V 220.00, Max V 245.00

N°	Code	Nominal V.(l)	Maximun V.(l)
3	23kV	22.90	25.00
4	33kV	33.00	37.50
5	69kV	69.00	75.00
6	138kV	138.00	145.00
7	220kV	220.00	245.00
8	500kV	500.00	550.00

Click on No. 7 to select 220 kV and click **Accept** to close the window.

Click on **F – L Units**. See Figure 1.

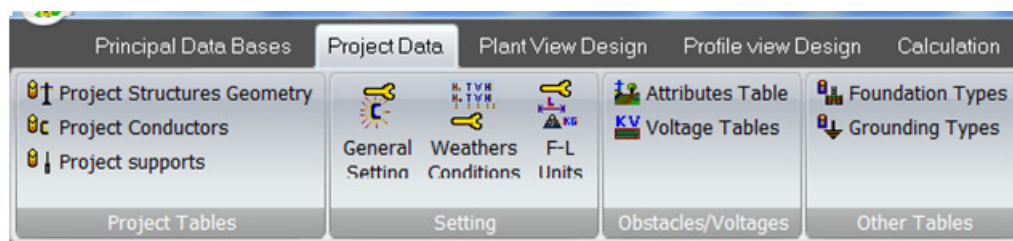
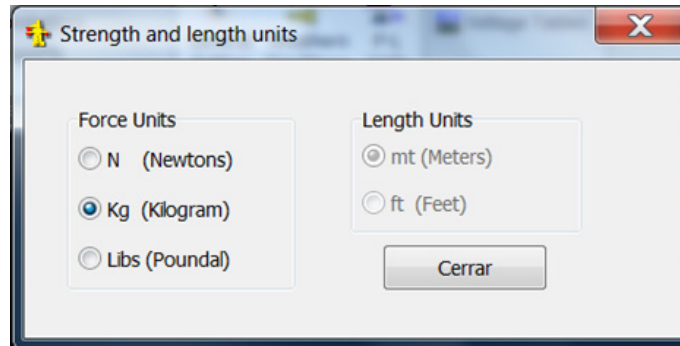


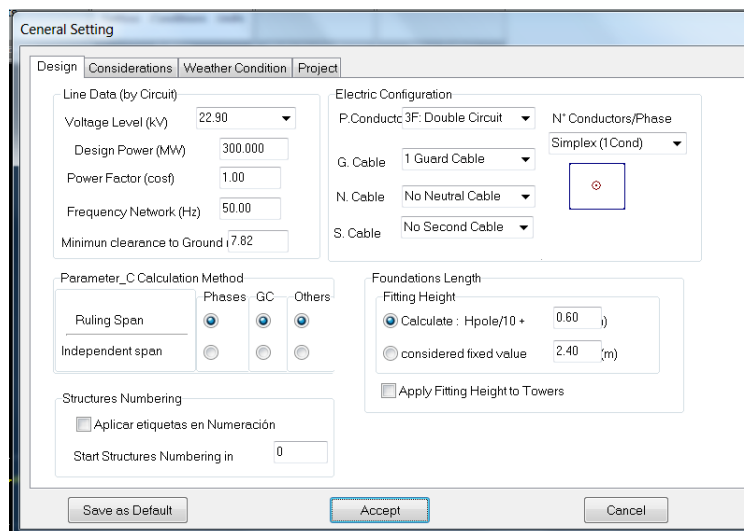
Figure 1

In the following window that shows up on the screen choose Kg as the **type of strength** and **length units** to be used in your TL design:



Click on **Cerrar (Close)**.

Click on **General Setting** and the following four tab window shows up on the screen:



The information to enter in this window depends of the type of overhead TL to be designed. Assuming that there is a need to design a TL with the following requirements:

LOCATION: Somewhere in Hawaii

ELECTRICAL:

Voltage Level, 3 phase:	220 kV
Design Power:	100 MW
Power Factor:	1
Frequency:	60 Hz
Min Clearance to ground	7.82 m
Conductors:	Single triple
Conductors per phase:	One
Guard cables:	Two
Neutral cable:	No
Secondary cable:	No

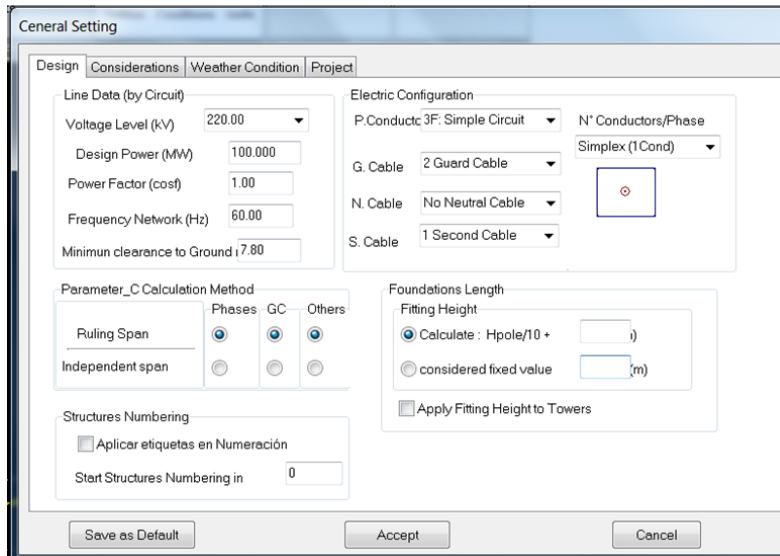
ENVIRONMENTAL:

Minimum Temperature: 19 ° C
Median Temperature: 26 ° C
Max Temperature: 36 ° C
Relative humidity: 90%
Max Wind Speed: 95 km/hour
Average altitude asl: 100 m
Isosraunic level: 40 days/y

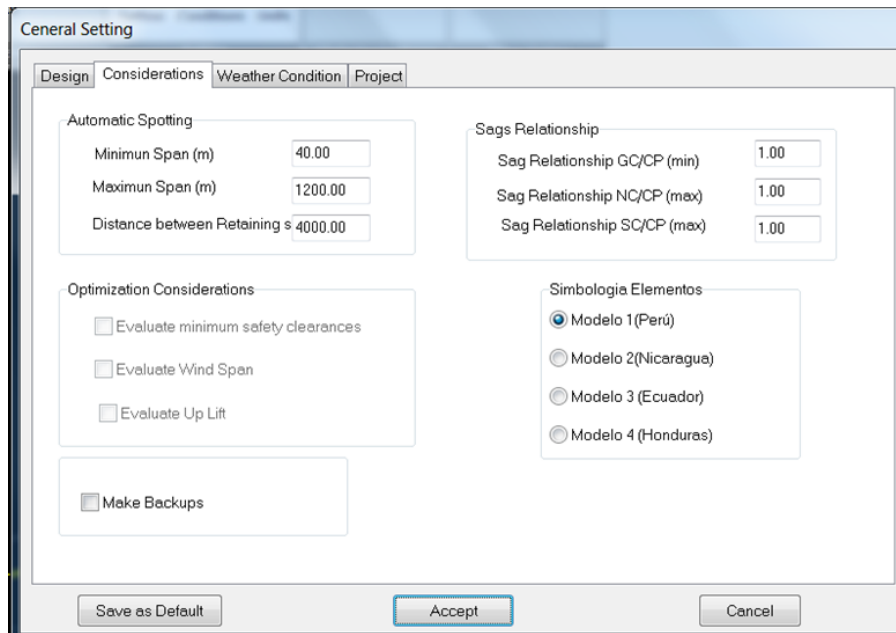
WIND PRESSURE:

On steel towers: 139 kg/m²
On phase conductor: 44 kg/m²
Guard cable: Ditto
Fiber optics cable: Ditto
String of suspension insul Ditto

In the **Design Tab** enter the information like this:



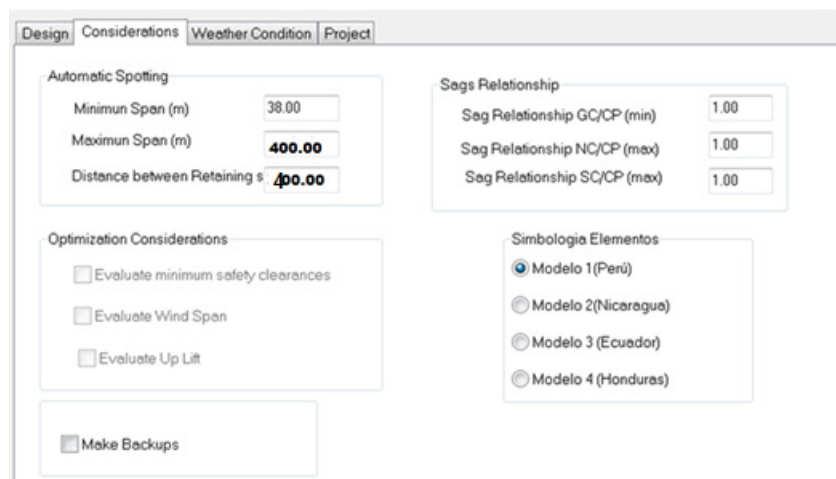
Click **Accept**, go back to **General Settings**, and open the **Considerations** tab:



To find data to enter in this tab go to **Profile View Design** and click on **Edit Profile Data – XZ**. Using this data the following estimates can be found:

Min span: 38 m
Max span: 400 m
Distance between retainings: 400 m

Entering these span lengths, the above **Considerations** tab becomes the following:



Click **Accept**.

Go back to **Project Data** and click on **General Settings** to open the **Weather Condition** Tab.

The screenshot shows the 'General Setting' dialog box with the 'Weather Condition' tab selected. The 'Weather Conditions' section contains five input fields: Minimum Temperature (°C) at -5.00, Average Temperature (°C) at 18.00, MAXimum Temperature (°C) at 40.00, Maximum wind speed (km/h) at 92.20, and Ice Thickness (mm) at 0.00. The 'Project Location' section contains four fields: Atmosphere type (Clear), Hemisphere (South), Latitude of Line (°g) at 15.00, and Azimuth of Line (°g) at 90.00. At the bottom are three buttons: 'Save as Default', 'Accept', and 'Cancel'.

Here you enter the environmental data given for the TL in Pages 2 and 3 of this tutorial, like this:

This screenshot shows the same 'General Setting' dialog box with updated values. In the 'Weather Conditions' section, the values are: Minimum Temperature (°C) at 19.00, Average Temperature (°C) at 26.00, MAXimum Temperature (°C) at 36.00, Maximum wind speed (km/h) at 95.00, and Ice Thickness (mm) at 0.00. In the 'Project Location' section, the values are: Atmosphere type (Clear), Hemisphere (North), Latitude of Line (°g) at 15.00, and Azimuth of Line (°g) at 90.00. The 'Accept' button is highlighted with a blue border.

Click **Accept**.

Go back to **Project Data**, click on **General Settings** and open the **Project** tab like this:

General Setting

Design Considerations Weather Condition **Project**

General Information

Contracting entity

Responsible Unit

Consultant / Contractor POCH

Supervisor

Project

Project Name / Line section

Tutorial Job1

Map Type Profile View and Plan View

Project Code

Professionals

	Names	Professiona
Responsible		0
Approval		0
Revision		0
Design		0
Calculations		0
Drawings		

Date OCTUBRE-2013

Map Label SJU

Currente Ve

Previews Ve

State/Region

Province

District

Save as Default Accept Cancel

Filling the data in the **Project** tab is self-explanatory. These data is included in the Plans and Drawings Title Boxes when they are exported to format DXF. **Click Accept.**

Continue with Tutorial 3.