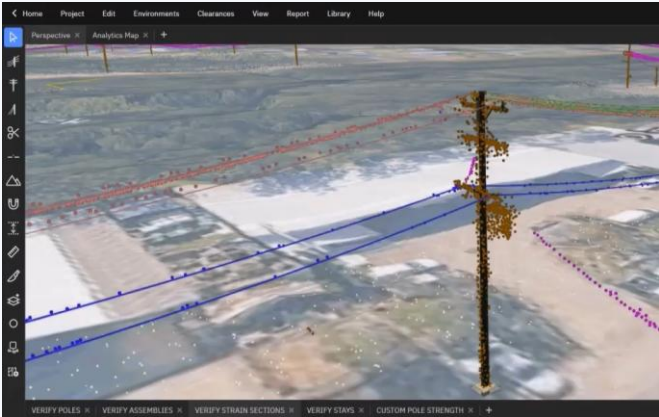


This QRG will show Neara users how to export a **‘Final’** stringing chart. Typically, this would be provided to lineworkers for retensioning an existing conductor, or for a pole replacement where final conductor information is required. It would also be relevant for survey checking an as-built feeder.

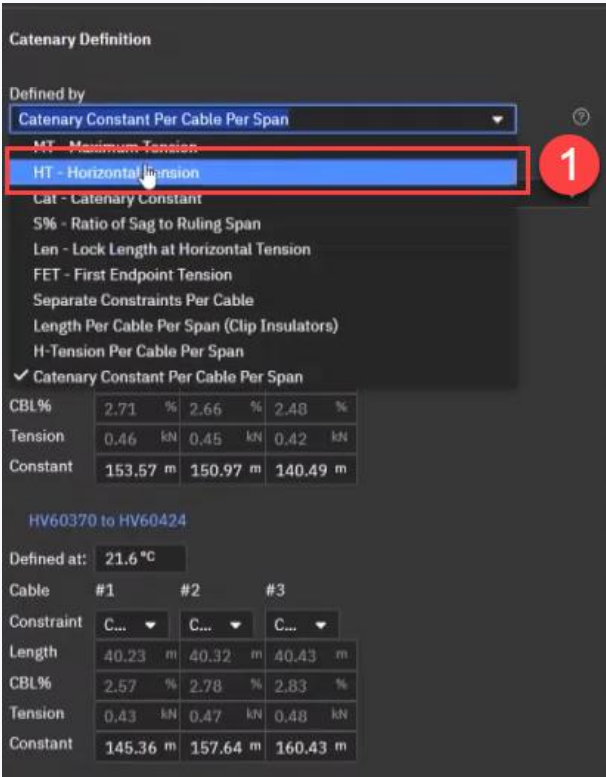
**‘Final’** charts are used for exiting conductors as they have been strung for some time and are assumed to have **crept**, or stretched, to the maximum expected. Therefore, no additional allowance for creep should be made when assessing or modifying an existing conductor.



When the Auto Model is loaded, a span that has been matched to LiDAR will typically have conductors **“Defined by” Catenary Constant Per Cable Per Span**; see the Properties tab:

In order to define the conductors at Ausgrid’s reference stringing temperature of 5°C, the **“Defined by”** field needs to be changed:

1. Switch the **Catenary Definition** to **HT - Horizontal Tension**:



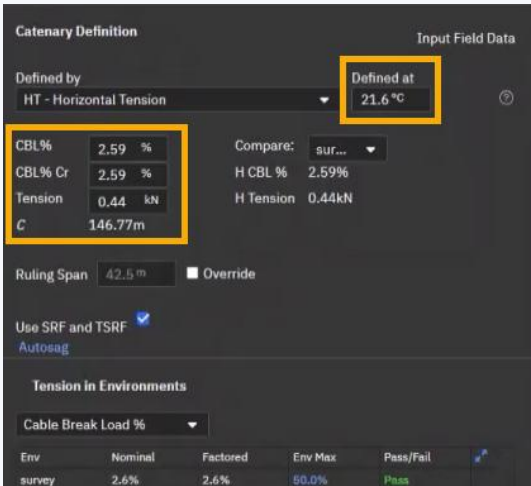
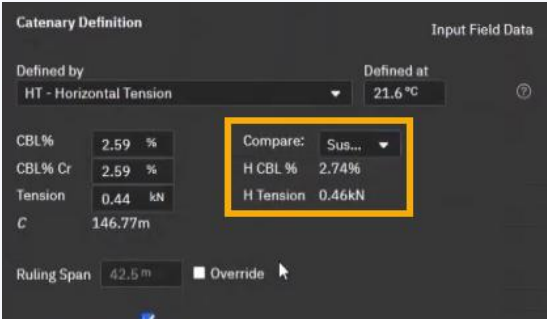
**Note:**  
**Catenary Constant Per Cable Per Span** sags each phase individually, whereas **HT – Horizontal Tension** applies an equal tension across all phases.

As a result, when doing **Step 1**, the conductors may no longer line up with the LiDAR capture. If required, adjust the **HT – Horizontal Tension** to the desired percentage (at the LiDAR definition temperature) to line the conductors up best with LiDAR points.

Note in this example that the LiDAR was captured at an ambient temperature of 21.6°, and at that temperature, the **CBL % Cr** is 2.59%

However, when talking % tension, Ausgrid’s standard definition temperature is 5°C.

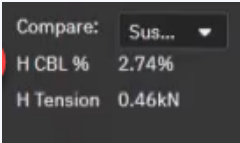
In order to present this existing tension at 5°C, use the calculator tool within the **Catenary Definition** :



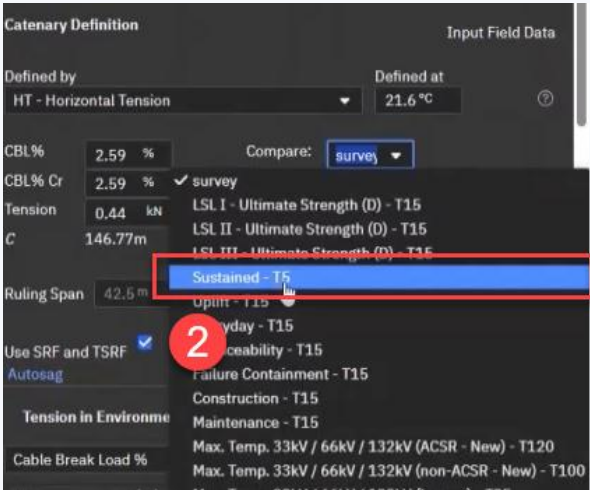
2. In **Compare:**, select **Sustained – T5**, which is the 5°C load case.

The result shows the horizontal tension at 5°C :  
- **H CBL %** of 2.74% and  
- (horizontal) **H Tension** of 0.46kN

We will take note of this **H Tension** value to compare it with the results in the 5°C column of the **‘Final’** stringing chart.



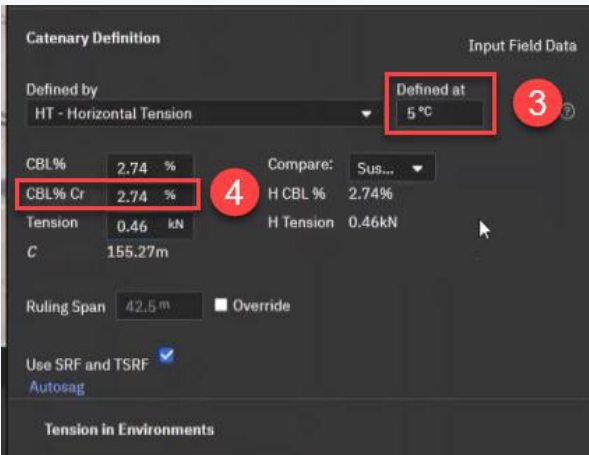
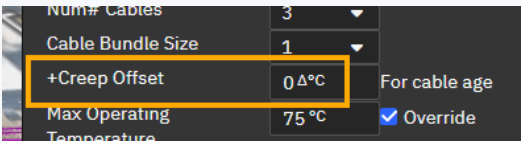
**Note:** the conductor in this example is Mercury with a CBL of 16.9kN. Hence:  
 $2.74\% \times 16.9\text{kN} = 0.46\text{kN}$



Implement these results in the conductor **Properties**:

3. Change the **Defined at** [temperature] to 5°C.  
4. Copy the **H CBL %** value (2.74%) and paste into the **CBL % Cr** field.

Note: ensure that the **+Creep Offset** value is 0°C :



5. Scroll down the **Properties** panel and click on **Export Stringing Table CSV**.  
Save this file to the project folder (or other relevant location).



6. Open the file in Excel to view the **Stringing Chart**.

- A. This deadend section contains 4 spans, and each are shown in this report.
- B. Confirm that the **H CBL %** value (2.74% @ 5°C) is reflected in this report.

Table is for initial stringing tensions (add creep temperature offset for final after creep tensions. Designer should ensure conditions evaluate)									
Conductor	Conductor Type	Ruling Span (m)		Horizontal Tension (% CBL @ 5°C)					
10007-100	11 Mercury	7	42.54	2.74 @ 5.0°C					
Start Pole	End Pole	Span Leng Cable		Temperature (°C)					
HV60284	HV60370	40.48 ALL		5 10 15 20 25 30					
				Sag (m)					
				1.32 1.35 1.37 1.39 1.42 1.44					
				Horizontal Tension (					
				0.46 0.45 0.45 0.44 0.43 0.43					
				Time (s)					
				6.19 6.25 6.3 6.36 6.41 6.46					
Start Pole	End Pole	Span Leng Cable		Temperature (°C)					
HV60370	HV60424	40.05 ALL		5 10 15 20 25 30					
				Sag (m)					
				1.3 1.33 1.35 1.37 1.4 1.42					
				Horizontal Tension (					
				0.46 0.45 0.45 0.44 0.43 0.43					
				Time (s)					
				6.15 6.2 6.26 6.31 6.36 6.41					
Start Pole	End Pole	Span Leng Cable		Temperature (°C)					
HV60424	HV61281	40.32 ALL		5 10 15 20 25 30					
				Sag (m)					
				1.31 1.33 1.35 1.38 1.4 1.42					
				Horizontal Tension (					
				0.46 0.45 0.45 0.44 0.43 0.43					
				Time (s)					
				6.15 6.21 6.26 6.32 6.37 6.42					
Start Pole	End Pole	Span Leng Cable		Temperature (°C)					
HV61281	HV60369	47.77 ALL		5 10 15 20 25 30					
				Sag (m)					
				1.85 1.89 1.92 1.95 1.98 2.01					
				Horizontal Tension (					
				0.46 0.45 0.45 0.44 0.43 0.43					
				Time (s)					
				7.33 7.39 7.46 7.52 7.58 7.64					

7. Neara automatically adds **'initial'** into the title of the report, however, change this to **'FINAL'** to prevent any confusion. The rest of the text in this field can be removed as it is not relevant

Table is for FINAL stringing tensions									
Conductor	Conductor Type	Ruling Span (m)		Horizontal Tension (% CBL @ 5°C)					
10007-100	11 Mercury	7	42.54	2.74 @ 5.0°C					
Start Pole	End Pole	Span Leng Cable		Temperature (°C)					
HV60284	HV60370	40.48 ALL		5 10 15 20 25 30 35 40					
				Sag (m)					
				1.32 1.35 1.37 1.39 1.42 1.44 1.46 1.48					
				Horizontal Tension (					
				0.46 0.45 0.45 0.44 0.43 0.42 0.41					
				Time (s)					
				6.19 6.25 6.3 6.36 6.41 6.46 6.51 6.56					

Interrogating the two key values in this report will confirm that these are indeed the **Final** values:

- A. **Horizontal Tension (% CBL) = 2.74% @ 5°C**
- B. **Horizontal Tension @ 5°C = 0.46kN**

8. This data can be copied to the **API Export 'Final Stringing Chart'** and added to Design plans as required.

**Note:** this Neara Stringing Table includes **"Time (s)"**, which is the 3-return-wave timing. This can be added to the API report if required.

Table is for FINAL stringing tensions									
Conductor	Conductor Type	Ruling Span (m)		Horizontal Tension (% CBL @ 5°C)					
10007-100	11 Mercury	7	42.54	2.74 @ 5.0°C					
Start Pole	End Pole	Span Leng Cable		Temperature (°C)					
HV60284	HV60370	40.48 ALL		5 10 15 20 25 30 35 40 45					
				Sag (m)					
				1.32 1.35 1.37 1.39 1.42 1.44 1.46 1.48 1.5					
				Horizontal Tension (					
				0.46 0.45 0.45 0.44 0.43 0.42 0.41 0.41 0.41					
				Time (s)					
				6.19 6.25 6.3 6.36 6.41 6.46 6.51 6.56 6.6					