



OVERHEAD LINES DESIGN; DESIGN CONCEPTS, ISSUES & PROBLEMS

1. LINE DESIGN SAG TENSION PARAMETERS

- a. What standard temperature do you use? 10°C, 15°C or XX?
- b. Default stringing %CBL?
 - Service lines- 3%, 5% or X%
 - LV - 5% or X%
 - 11kV - 5%, 10% or 12%
 - 33kV - 10%, 12% or 15%
 - 66kV - 12%, 15%, 17% or XX%?

2. END TERM STAYED I-B CONCRETE POLE

- a. Which way should the main axis of the pole be configured to? Across line or inline?
- b. Sketch the pole deflected shape under line wind loads.

3. CONCRETE POLES ALONGSIDE A DRAINAGE DITCH

- a. Do you need to make allowances for reduced foundation capacity?
- b. Can you increase embedment depth?

4. INLINE POLES

- a. Does it matter if the adjacent spans are say, over 50% different?
- b. What happens if the pole is made a strain pole?

5. HARDWOOD TIMBER POLE

- a. What's the tip load capacity of an 8kN 12m HW?
- b. Do you apply a k_d (degradation) factor to this?

6. CAN POLE BLOCKING SUBSTITUTE FOR POLE STAYS?

- a. Yes, no, or sometimes?

7. IF YOU SEE A SLACK POLE STAY, DOES IT MEAN YOU CAN REMOVE IT?

- a. Yes, no, or sometimes?

8. WHAT HAS THE GREATER IMPACT ON POLE FOUNDATION CAPACITY?

- a. Pole diameter or pole embedment?

9. HOW EFFECTIVE ARE HEEL BLOCKS FOR POLES IN RESISTING POLE TIP LOADS?

- a. Very or not very?

10. WHAT STRENGTH REDUCTION FACTORS DO YOU APPLY TO THE ULS CAPACITY VALUES (ACROSS LINE & DOWNLINE) GIVEN FOR SAY BENDING IN BUSCK POLES?

- a. 1.0, 0.9 or 0.85?



11. WHO IS AWARE OF THE 2021 UPDATE TO AS/NZS 1170.2 - WIND ACTIONS?

- a. Yes, or no?
- b. Who is using the 2021 version in design?
- c. This Standard contains changes to;
 - Wind regions in NZ
 - Regional wind speeds
 - NZ Lee Zones
 - Updated wind direction multipliers (M_d) for the new NZ regions
 - Wind direction multiplier $M_d = 1.0$ for towers & poles
 - The Standard specifically states that it does not cover power transmission & distribution structures, including towers, poles.

Note: NZ Lee Zones are now defined and available as kmz files.

12. AS/NZS 7000 SPECIFICALLY REFERS TO AS/NZS 1170.2 TO DETERMINE THE ULS WIND RETURN PERIODS FOR DESIGN LOADS IN TABLE 6.1 OF AS/NZS 7000

- a. What version of AS/NZS 1170.2 is currently being used?
- b. 2011 or 2021?

13. WHAT IS THE DOMINANT WIND ACTION FOR DESIGNS IN YOUR NETWORK?

- a. Downdraft or synoptic?

14. SPAN REDUCTION FACTORS

- a. Do you apply them for distribution situations?
- b. Or only for large spans
- c. Do you apply them for HV situations?



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