Seven Steps to a Successful Nomogram Calculation of Fire Behavior

Fuel Model Contains only Dead Fuels

1. Lower Left Quadrant: Determine the Effective Wind Speed using slope (%) and midflame wind speed (mi/h)

2. Lower Right Quadrant: Draw a line representing the Effective Wind Speed from Step 1.
   a. This is your turn line.
   b. Watch out for the wind limit line!

3. Upper Left Quadrant: Accounting for the Heat Sink
   a. Draw a line representing the dead fuel moisture (%). This is your turn line.

4. Upper Right Quadrant: Begin the Continuous Line
   a. Draw a horizontal line from the fine dead fuel moisture to the S-curve (Moisture Dampening Curve).
   b. At the intersection of the dead fuel moisture and the S-curve, draw a line from the top of the Upper Right Quadrant towards the turning line (effective wind speed, Step 2) in the Lower Right Quadrant.
      i. Watch for the wind limit line! If you reach this line first, make your turn there!
   c. Draw a horizontal line towards the Lower Left Quadrant.

5. On to the Lower Left Quadrant.
   a. Continue drawing the horizontal line until you reach the turning line in the lower left quadrant. This is the diagonal line. Ignore the wind speed and slope lines!
   b. At the turn line, start drawing a vertical line towards the Upper Left Quadrant.

6. Back to the Upper Left Quadrant
   a. Continue the vertical line from Step 5, stopping at the turn line (Fine Dead Fuel Moisture, Step 3).
   b. Start drawing a horizontal line back towards the Upper Right Quadrant.

7. Upper Right Quadrant: finish the nomogram.
   a. Continue drawing the horizontal line from Step 6.
   b. Stop when you reach the vertical line you started with (Step 4). Circle the intersection of the two lines.
   c. Read the Heat per Unit Area from the X-axis.
   d. Read the Surface Rate of Spread from the Y-axis.
   e. Read the Flame Length and Fireline Intensity from the curves.

Fuel Model Contains Live and Dead Fuels

1. Lower Left Quadrant: Determine the Effective Wind Speed using slope (%) and midflame wind speed (mi/h)

2. Lower Right Quadrant: Draw a line representing the Effective Wind Speed from Step 1.
   a. This is your turn line.
   b. Watch out for the wind limit line!

3. Upper Left Quadrant: Accounting for the Heat Sink
   a. Draw a straight, horizontal line representing the dead fuel moisture. This line crosses both the Upper Left Quadrant AND the Upper Right Quadrant.
   b. Upper Left Quadrant: Draw a straight line from the intersection of the Dead Fuel Moisture line and the Appropriate Live Fuel Moisture line to the line representing the dead fuel moisture (%). This straight line, the K-line, is your turn line.

4. Upper Right Quadrant: Begin the Continuous Line
   a. Draw a horizontal line from the fine dead fuel moisture to the curved line representing the live fuel moisture
      i. If you can't read the numbers, the dot-dash lines are the same as in the Upper Left Quadrant.
   b. At the intersection of the dead and live fuel moisture lines, draw a line from the top of the Upper Right Quadrant towards the turning line (effective wind speed, Step 2) in the Lower Right Quadrant.
      i. Watch for the wind limit line! If you reach this line first, make your turn there!
   c. Draw a horizontal line towards the Lower Left Quadrant.

5. On to the Lower Left Quadrant.
   a. Continue drawing the horizontal line until you reach the turning line in the lower left quadrant. This is the diagonal line. Ignore the wind speed and slope lines!
   b. At the turn line, start drawing a vertical line towards the Upper Left Quadrant.

6. Back to the Upper Left Quadrant
   a. Continue the vertical line from Step 5, stopping at the turn line (K-line, Step 3).
   b. Start drawing a horizontal line back towards the Upper Right Quadrant.

7. Upper Right Quadrant: finish the nomogram.
   a. Continue drawing the horizontal line from Step 6.
   b. Stop when you reach the vertical line you started with (Step 4). Circle the intersection of the two lines.
   c. Read the Heat per Unit Area from the X-axis.
   d. Read the Surface Rate of Spread from the Y-axis.
   e. Read the Flame Length and Fireline Intensity from the curves.