

## Wildland Apparatus Engineer, SP

### Dozer FireBridge Btu Removal Estimator

The DozerBtu2.xlsx spreadsheet is put together in US(imperial) Units. All figures inside the tables are in BTU and are to the LEFT of the decimal point. So the figures are in the 10's and 100's of millions of Btu's and other instances in the billions of Btu's.

The DozerBtu2 excel spreadsheet can be used with metrics. However, the Blade width section, upper left corner in **RED**, must be converted to feet otherwise erroneous numbers will be displayed and your estimated Btu figures will NOT be accurate.

For the sheets:

¼ mile = 1,320 feet or 402.4 meters

½ mile = 2,640 feet or 804.8 meters

¾ mile = 3,960 feet or 1,207.3 meters

Meters to feet x by 3.28

If you have a dozer blade that is 3.7 meters wide then:  $3.7 \times 3.28 = 12.13$  feet. This is what must be entered into the upper left corner for the Btu figures to be populated correctly. This is the ONLY user-editable cell box in the entire spreadsheet.

DO NOT ENTER METRIC BLADE WIDTH's IN THE CELL DIRECTLY.

The left side of the table with the first set of numbers 1-7 is for the initial Heat per Unit Area of 1 foot (.3048m) for each single blade width. This can be visualized as seen on sheet 1; for a Heat per Unit Area of 800 Btu per Square Foot(.3048m<sup>2</sup>), for a single dozer blade width of 12.13 feet (3.69m) the Btu total would be approximately equal to 9,704Btu.

Moving over to the next table, under blade width 1 again for 800 Btu per square foot(.3048m<sup>2</sup>), shows that for a ¼ mile (402m) long cut, 12,809,280 Btu would be removed from the fire path.



The End user is the one responsible for making the appropriate conversions for the spreadsheet to display proper results and further, the end-user must obtain the HPA Btu figures from the FBAN on the Fire so that the best information can be used.

Lastly, the figures displayed would be representative of the AREA in square feet for the table being used. The user would have to convert the area in square feet to square meters or equivalent values.

For example. If we have a Btu HPA of 1,500(Btu/Ft<sup>2</sup>)(1500Btu/.3048m<sup>2</sup>), and a 3 blade wide(12.13ft x 3)(3.69m x 3) push for  $\frac{3}{4}$  of a mile(1207m), then the total Btu in fuel removed would be approximately that of 216,156,600 Btu. As long as you use like equivalents you will be fine.

This sheet is useable on 32 and 64 bit operating systems of windows, and WinXP systems.

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