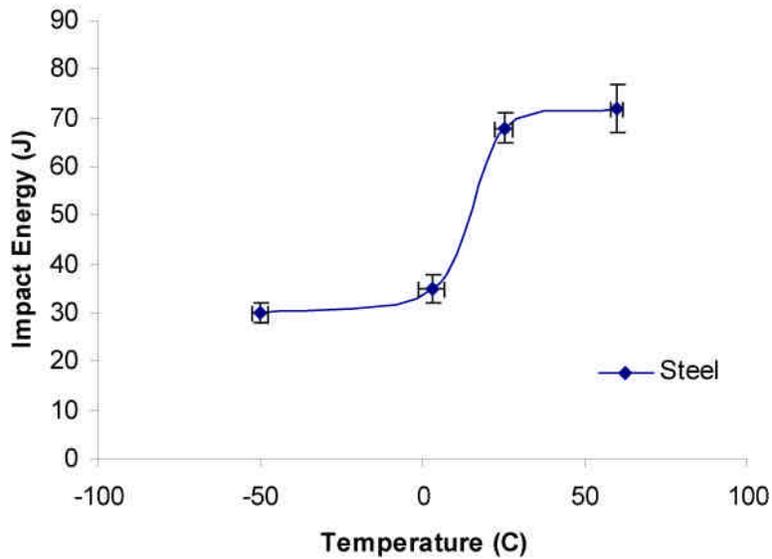


Plotting X- and Y-Error bars in Excel



1. Calculate the average and standard deviation of temperature and impact energy.
 - a. Excel commands: AVERAGE, STDEV
2. Plot the average temperature and average impact energy
3. Right Click on a data point
4. Select "Format Data Series"
5. Select tab labeled "X Error Bars"
6. Select Display "Both"
7. Select Error Amount "Custom"
8. Enter in your range of temperature standard deviations that match (see below)
9. Repeat for Y error bars.

The screenshot shows the 'Format Data Series' dialog box in Excel, specifically the 'X Error Bars' tab. The 'Display' section has 'Both' selected. Under 'Error amount', 'Custom' is selected with the following formulas:

- Standard deviation(s): $=\text{Sheet1}!\$B\$3:\$B\6
- Standard error: $=\text{Sheet1}!\$B\$3:\$B\6

 The background shows an Excel spreadsheet with the following data:

Temperature (C)	Error in Temperature (C)	Impact Energy (J)	Impact Energy Error (J)
60	2	72	72
25	3	68	68
3	4	35	35
-50	2.3	30	30