



A Marmon Wire & Cable/Berkshire Hathaway Company

Wire and Cable Ampacity

Calculating Ampacity of high temperature wire and cable cannot simply be accomplished using standard reference guides. Using information gained by answering the questions below will be helpful to best approximate the ampacity of a specific cable design in a given installation.

Necessary information will always include the following:

- 1.) What is the ambient temperature (worst case) at the installation location?
- 2.) What is the highest operating temperature (heat measured on the cable surface) which the user is comfortable with?
- 3.) How will the product be installed? (i.e. Open Tray, Conduit, with other wire & cable etc.)
- 4.) Is there any ventilation at the installation location? (i.e. fan, breeze, etc.)
- 5.) Is the installed product prone to solar exposure? (i.e. sun or no sun)

When you have this information in hand, please contact a Cable USA engineer at engineering@cableusallc.com for assistance with the ampacity calculation.

Note that when following any published "Cable Ampacity Chart", careful attention must be paid to the conditions under which the chart was developed. These are usually (i.e., should *always be*) found above or below the chart – and the user should avoid using any data which does not stipulate applicable conditions.

The user should also be aware that some high temperature cables employ conductors which are inherently higher in resistance than copper, size-for-size, and this will also adversely impact ampacity.

The bottom line: There is no "magic wire" which can carry more current in a given size, without generating additional heat (superconductors being a singular exception to this statement). Whenever higher current is needed, the engineer must appropriately calculate and manage the system design to avoid unintended consequences.