

## Component Selection for Certified Products

Do the components need to be “Certified”?

### Component Certification

All safety critical components must comply with the applicable component safety standard. This is a general requirement included in all safety standards = UL, CSA, EN, & IEC. Wiring evaluated to the appropriate wire standard, cabling evaluated to the appropriate cable standard, etc. Plastics, connectors, switches, fuses, power supplies, transformers, EMI filters, motors, ballasts, drivers, batteries, battery packs, etc.

Every component that puts your product in compliance with any clause in any of the applicable safety standards is a “safety critical component” (shock hazards, fire hazards, energy hazards, injury hazards, chemical hazards, & radiation hazards). Every safety critical component must meet its component safety standard - isolating devices, enclosure materials, insulating materials, power supplies, batteries, etc. This helps explain why there are over 600 UL standards.

### Certified Component Considerations

In general, when sourcing safety critical components, you should ask your vendor for a UL/CSA/CE certified part.

- a) Select UL certified components which have already been proven to comply with their component standard.
- b) When selecting certified components, be sure they have suitable ratings for your application = voltage, current, temperature rating, moisture/dust resistance, etc.
- c) Always review the instructions provided with the component as they define proper installation and use of the components.
- d) When selecting UL “Recognized Components” (R), also be sure to check their UL “Conditions of Acceptability”.

### Uncertified Components – Your Options

The same options apply for all uncertified safety critical components - you can either:

1. Change to a certified component suitable for your application or,
2. Have the uncertified component evaluated to the applicable component safety standard as part of the review on your overall product. For some components, this may not be too difficult (i.e. transformers). For other components, it really is not realistic (i.e. fuses, wiring).

### Uncertified Component Review Considerations

We advise all of our customers to avoid uncertified components. However, if there are no commercially available certified components that fit your need, you may have no choice but to have the component certified as part of your overall product. Before choosing this path, you should consider:



### Uncertified Component Review Considerations: continued

- a) There can be significant additional cost, time, and samples required to review uncertified parts.
- b) Keep in mind that the component safety standards are just as extensive as the end product safety standards. Frequently the cost and time to certify a component can exceed the cost/time to certify the finished product.
- c) The component manufacturer must be willing to provide proprietary product design and material details in order for the component to be reviewed to the component standard. Are they willing to provide this information?
- d) After all the additional time and expense, the component could “fail” the review and you could be right back where you started. At the very least, have a plan should the component fail to comply.
- e) If problems are found during the component review, the component manufacturer must be willing to revise the component construction to comply. You should have a commitment from the component vendor to make any necessary changes – you can assume some component design changes will be necessary. Will that affect the component cost?
- f) Uncertified components found to comply are subject to ongoing inspections and in some cases, annual component testing.
- g) And there is the potential for a big complicating factor. UL has a virtual monopoly on component certifications in the US. As a result, for some types of components, only UL has the capability to conduct the component testing (some component standards require highly specialized, expensive, custom test equipment).

### Component Sourcing Conclusions:

- 1) The best solution utilizes the fewest number of uncertified parts (including certified parts that are modified).
- 2) Selecting an uncertified part based on component cost savings is a very bad idea. The cost savings will be more than offset by the added cost and time necessary to have the uncertified component evaluated for compliance.

**Don't be caught by surprise**

**CertifiGroup performs Preliminary Reviews  
to UL, CSA, EN-CE, and IEC standards**

**CertifiGroup can help you properly source  
your components for compliance**

**CertifiGroup can evaluate your uncertified components**