

Equipment Type

The Type option allows you to select the different types of equipment that are supported for arc flash analysis. The available equipment types are as follows:

- Other
- MCC
- Switchgear
- Switchboard
- Switchrack
- Panelboard
- Cable Bus
- Open Air

Note: These types come from IEEE 1584-2002 Table 4. The switchboard and switchrack are handled in the same fashion as the switchgear. The Type drop down list plays a very important role in the determination of the incident energy for systems with voltage levels less than or equal to 15 kV.

Note: For voltages above 15 kV the selection of equipment type does not make any difference in the arc flash calculations since the Lee method is used for those voltage levels.

For new buses the default value is “Other” which is handled in the same manner as a cable bus, since in previous versions of ETAP the Cable Bus option was tied to this selection.

If the option “Automatically Update Arc Flash and Shock Protection Data” is enabled, the fields in the bus editor related to arc flash are immediately populated with typical or user-defined IEEE 1584 and NFPA 70E 2009 parameters depending on the selection on the Data Options for Bus editor default editor.

Protective Device Isolation

This is a major change on the calculation methodology of ETAP. This option can be used to configure the program to produce more conservative results by making the assumption that the main source protective device(s) (PDs) are or are not adequately isolated from the bus and may fail to operate and be capable of de-energizing the arc fault before it escalates into a line-side arc fault.

If this option is checked, then the program assumes that there is enough isolation and that the directly connected source protective device (main pd(s)) can de-energize the bus arc fault. If the option is unchecked, then it is assumed that no adequate isolation exists (i.e. no sheet metal or sufficient barriers preventing the bus side arc fault from damaging the protective device itself and possible escalation into a line-side fault) and the directly connected source PDs are ignored.

Note: This option (checked or unchecked) is not considered or applied into the calculation until the study case option “Main Protective Device is not Isolated” is enabled.

The following table lists the default values of this option for different types of equipment.

Default Values for “Main PD is Isolated” check box

| Isolation Check Box for Equipment Type | Default |
|--|--------------------------|
| Other | Isolated (checked) |
| MCC | Not Isolated (unchecked) |
| Switchgear | Isolated (checked) |
| Switchboard | Not Isolated (unchecked) |
| Switchrack | Isolated (checked) |
| Panelboard | Not Isolated (unchecked) |
| Cable Bus | Isolated (checked) |
| Open Air | Isolated (checked) |