



# TOUCHPROOF DEFINED

Due to several well-publicized infant deaths in the mid-1980s, touchproof connector systems were originally designed to protect from accidental power main insertions. Medical Touchproof (or "safety") connectors have evolved into a specialized class of connectors that fall under several international standards.

IEC/EN 60601-1 is an International (originally European) standard that covers the overall electrical safety requirements for medical equipment connected to electrical mains. It specifies overall test requirements that connection systems must meet. This standard does not tell you how to design the connector, rather it tells you its minimum performance requirements.

The majority of medical leadwires fall under one of two clauses. Clause 56.3 (a) is concerned with jacks mounted directly to equipment, and refer back to clause 16(a) for test requirements. A standard test finger applying a force of 30 Newton's is specified under this section.

Clause 56.3(c) deals with "a lead having a conductive connection to a patient", which is your standard leadwire. For this class of product, the test force is reduced to 10 Newton's.

The other major design standard for Touchproof connection systems is DIN 42 802. This standard establishes overall dimensions for both the plug (form ST) and the jack (form BU). The standard was created in part to ensure compatibility of 1.5mm Touchproof plugs between manufacturers. It also establishes the 1.5mm pin setback on the jack and the 1mm socket setback on the plug.

DIN 42 802 by definition does not define 2mm or 1mm connection systems. However, some of the design guidelines, such as pin setback, can be applied to these (and other) designs as well. It is up to the end user to determine if any particular design will meet their requirements.