

Arc Flash: An arcing fault is the flow of current through the air between phase conductors or phase conductors and neutral or ground. An arcing fault can release tremendous amounts of concentrated radiant energy at the point of the arcing in a small fraction of a second resulting in extremely high temperatures, a tremendous pressure blast, and shrapnel hurling at high velocity.

ASTM: American Society for Testing and Materials

Arc Thermal Performance Value (ATP V): This value is presented in calories per square centimeter and represents the maximum capability for arc flash protection of a particular garment. This rating also applies to fabrics, however, a garment made from more than one layer of arc flash rated fabric will have a calorie per square centimeter rating greater than the sum of the ATPV ratings of the original fabrics.

The calories per square centimeter rating of most arc flash protection suits, coveralls, and coats is commonly sewn into the fabric in large letters on the outside of the garment.

Calories per Centimeter Squared (cal/cm²): This is a number identifying the amount of energy that can be delivered to a point at a particular distance from an arc flash. Once this value is known, the ATPV rating of the flash clothing required for work at that distance from the potential flash hazard is also known. See ATPV.

Calorie: A calorie is the energy required to raise one gram of water one degree Celsius at one atmosphere. The onset of second-degree burns may occur at 1.2 calories per centimeter squared per second. One calorie per centimeter squared per second can be equal to holding your finger over the tip of the flame of a cigarette lighter for one second.

De-energized: Free from any electrical connection to a source of potential difference and from electrical charge; not having a potential different from that of the earth.

Electrical Hazard: A dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast.

Electrical Safety: Recognizing hazards associated with the use of electrical energy and taking precautions so that hazards do not cause injury or death.

Electrically Safe Work Condition: A state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.

Flame-Resistant (FR): The property of a material whereby combustion is prevented, terminated, or inhibited following the application of a flaming or non-flaming source of ignition, with or without subsequent removal of the ignition source.

Flash Hazard: A dangerous condition associated with the release of energy caused by an electric arc.

Flash Hazard Analysis: A study investigating a worker's potential exposure to arc-flash energy, conducted for the purpose of injury prevention, the determination of safe work practices, and the appropriate levels of PPE.

Flash Protection Boundary: An approach limit at a distance from exposed live parts within which a person could receive a second degree burn if an electrical arc flash were to occur.

Flash Suit: A complete FR clothing and equipment system that covers the entire body, except for the hands and feet. This includes pants, jacket, and bee-keeper-type hood fitted with a face shield.

Hazard Risk Category (HRC): Categories defined by NFPA 70E-2004 to explain protection levels needed when performing tasks.

The values range from -1 to 4. ATPV rated PPE is required for categories 1 through 4 as follows:

• Category 1: 4 cal/cm² • Category 2: 8 cal/cm² • Category 3: 25 cal/cm² • Category 4: 40 cal/cm²

IEEE: The Institute of Electronics and Electrical Engineers (IEEE) (Note: IEEE1584 - 2002 Guide to Performing Arc-Flash Hazard Calculations).

Incident Energy: The amount of energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. One of the units used to measure incident energy is calories per centimeter squared (cal/cm²).

Limited Approach Boundary: An approach limit at a distance from an exposed live part within which a shock hazard exists.

NEC The National Electrical Code: The NFPA Standard 70-2005 "The National Electrical Code" (NEC) (Note: paragraph 110.16 contains requirements for warning labels).

NFPA: The National Fire Protection Association.

NFPA 70E Standard: Standard that provides guidance on implementing appropriate work practices that are required to safeguard workers from injury while working on or near exposed electrical conductors or circuit parts that could become energized.

OSHA: Occupational Safety and Health Administration.

OSHA 29 CFR 1910, Subpart S-Electrical: Occupational Safety and Health Standards. Section 1910 Subpart S-Electrical Standard number 1910.333 specifically addresses Standards for Work Practices.

Prohibited Approach Boundary: An approach limit at a distance from an exposed live part within which work is considered the same as making contact with the live part.

Restricted Approach Boundary: An approach limit at a distance from an exposed live part within which there is an increased risk of shock, due to electrical arc over combined with inadvertent movement, for personnel working in close proximity to the live part.

Shock Hazard: A dangerous electrical condition associated with the possible release of energy caused by contact or approach to energized parts.

Voltage, Nominal: A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class. The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

Working Near (live parts): Any activity inside a limited approach boundary.

Working On (live parts): Coming in contact with live parts with the hands, feet, or other body parts, with tools, probes, or with test equipment, regardless of the personal protective equipment a person is wearing.

OEL - ARC Flash Wear - Leader in providing quality, inexpensive ARC Flash Protective Clothing

