

LYNCOLE GLOSSARY OF TERMS

AIR TERMINAL - A METALLIC ROD USED ON TOP OF STRUCTURES FOR LIGHTNING PROTECTION. MAY BE MADE OF EITHER STAINLESS STEEL, COPPER OR ALUMINUM. SEE ALSO **LIGHTNING ROD**.

ALTERNATING CURRENT (AC) - ELECTRICAL CURRENT, WHICH REVERSES DIRECTION REPEATEDLY AND RAPIDLY. THE CHANGE IN CURRENT IS DUE TO A CHANGE IN VOLTAGE THAT OCCURS AT THE SAME FREQUENCY.

AMERICAN WIRE GAUGE (AWG) - A STANDARD USED TO DESCRIBE THE SIZE OF A WIRE. THE LARGER THE AWG NUMBER, THE SMALLER (THINNER) THE DESCRIBED WIRE. SEE ALSO **CONDUCTOR**.

AMPERE (AMP) - UNIT OF CURRENT MEASUREMENT. THE AMOUNT OF CURRENT THAT WILL FLOW THROUGH A ONE OHM RESISTOR WHEN ONE VOLT IS APPLIED. SEE ALSO **CURRENT**.

BONDING (BONDED) - THE PERMANENT JOINING OF TWO METALLIC PARTS TO FORM AN ELECTRICALLY CONDUCTIVE PATH THAT WILL ENSURE ELECTRICAL CONTINUITY AND THE CAPACITY TO CONDUCT SAFELY ANY CURRENT LIKELY TO BE IMPOSED.

BONDING JUMPER (CONDUCTOR) - A RELIABLE CONDUCTOR TO ENSURE ELECTRICAL CONDUCTIVITY BETWEEN METAL PARTS REQUIRED TO BE ELECTRICALLY CONNECTED.

BURNDY - A BRAND OF CONNECTOR USED IN GROUNDING APPLICATIONS.

BUS BAR - THE METAL BAR USED TO CARRY ELECTRICAL CURRENTS TO SUPPLY ELECTRICAL CIRCUITS OR TO DIVERT SUCH CURRENTS TO GROUND. SEE ALSO **MAIN GROUND BAR (MGB)**.

CADWELD - A BRAND OF EXOTHERMIC WELD.

COMPRESSION LUG - A GROUNDING CONNECTOR MADE BY USING A SPECIALLY MADE HIGH COMPRESSION TOOL FOR CONNECTION OF A GROUND CONDUCTOR TO A BUS BAR. SEE ALSO **BURNDY**.

CONCRETE ENCASED ELECTRODE - A GROUNDING SYSTEM COMPRISED OF REINFORCING RODS THAT ARE CONTAINED IN THE CONCRETE WALLS AND FOOTINGS. ELECTRICAL CONNECTIONS ARE MADE DIRECTLY TO THE METAL REINFORCING BARS. SEE ALSO **UFER GROUND**. (THIS IS NO LONGER A RECOMMENDED GROUNDING METHOD.)

CONDUCTOR - A SUBSTANCE THAT OFFERS LITTLE RESISTANCE TO THE FLOW OF ELECTRICAL CURRENTS. COPPER WIRE IS THE MOST COMMON FORM OF CONDUCTOR.

COUNTERPOISE - A BURIED LENGTH OF CONDUCTOR, USUALLY AROUND A STRUCTURE OR TOWER. SEE ALSO **GROUND RING**.

CURRENT - THE FLOW OF ELECTRICITY IN A CIRCUIT, MEASURED IN AMPERES. SEE ALSO **AMPERE**.

DRIVEN ROD - A METALLIC STAKE USED FOR ELECTRICAL GROUNDING APPLICATIONS. USUALLY MADE OF COPPER CLAD STEEL, BUT CAN BE MADE OF SOLID COPPER OR GALVANIZED STEEL. SEE ALSO **GROUND ROD**.

DIRECT CURRENT (DC) - ELECTRICAL CURRENT THAT FLOWS IN ONE DIRECTION ONLY.

ELECTROLYTIC GROUND ROD - A GROUNDING ELECTRODE MADE OF A HOLLOW PIPE WITH NATURAL EARTH SALTS THAT IS ENVIRONMENTALLY FRIENDLY TO THE EARTH. SEE ALSO **XIT[®] ROD**.

LYNCOLE GLOSSARY OF TERMS

EXOTHERMIC WELD - A PERMANENT ELECTRICAL CONNECTION USING POWDERED METALLURGY TECHNOLOGY THAT CREATES MOLECULAR BONDS WITHIN CONDUCTORS. SEE ALSO **CADWELD** AND **THERMOWELD**.

GROUND - AN ELECTRICAL CONNECTION, WHETHER INTENTIONAL OR ACCIDENTAL, BETWEEN AN ELECTRICAL CIRCUIT OR EQUIPMENT AND THE EARTH, OR TO SOME CONDUCTING BODY THAT SERVES IN PLACE OF THE EARTH.

GROUND ROD - A METALLIC PIPE OR STAKE USED FOR ELECTRICAL GROUNDING APPLICATIONS. CAN BE MADE OF COPPER CLAD STEEL, SOLID COPPER, GALVANIZED STEEL OR COPPER PIPE FILLED WITH NATURAL EARTH SALTS. ALSO KNOWN AS A GROUNDING ELECTRODE. SEE ALSO **DRIVEN ROD** AND **ELECTROLYTIC GROUND ROD**.

GROUND RING - A BURIED LENGTH OF CONDUCTOR, USUALLY AROUND A STRUCTURE OR TOWER. SEE ALSO **COUNTERPOISE**.

HALO - A RING OF CONDUCTOR INSTALLED IN A STRUCTURE, USUALLY JUST BELOW THE CEILING TO FACILITATE INTERCONNECTION OF NON-POWERED METALLIC OBJECTS.

INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE) - A PROFESSIONAL SOCIETY FOR ELECTRICAL AND ELECTRONIC ENGINEERS.

INTERNATIONAL ASSOCIATION OF ELECTRICAL INSPECTORS (IAEI) - A PROFESSIONAL SOCIETY OF ELECTRICAL INSPECTORS.

JOULE - A UNIT OF ELECTRICAL, MECHANICAL AND THERMAL ENERGY. ONE JOULE IS EQUAL TO THE AMOUNT OF ENERGY TO THE WORK DONE WHEN A CURRENT OF ONE AMPERE IS PASSED THROUGH A RESISTANCE OF ONE OHM FOR ONE SECOND.

LIGHTNING ROD - A METALLIC ROD USED ON TOP OF STRUCTURES FOR LIGHTNING PROTECTION. MAY BE MADE OF EITHER STAINLESS STEEL, COPPER, OR ALUMINUM. THE NEW CORRECT TECHNICAL TERM IS **AIR TERMINAL**. SEE ALSO **AIR TERMINAL**.

MAIN GROUND BAR (MGB) - A METAL BAR, USUALLY MOUNTED IN A DOMINANT AREA OF A STRUCTURE, TO WHICH ALL OTHER BUS BARS, GROUNDING ELECTRODES AND GROUNDING CONDUCTORS ARE INTERCONNECTED OR BONDED. SEE ALSO **BUS BAR**.

MECHANICAL CLAMP - A DEVICE USED TO SECURE A CONDUCTOR TO A GROUNDING ELEMENT. USUALLY CONSISTS OF AN OVAL OF METAL WITH A BOLT THAT IS MECHANICALLY TIGHTENED ONTO THE CONDUCTOR. NOT CONSIDERED VERY RELIABLE AS THE CLAMP CAN CORRODE OR BECOME LOOSE OVER TIME.

NATIONAL ELECTRICAL CODE (NEC) - THE GOVERNING CODE IN THE UNITED STATES THAT CONTAINS SAFETY GUIDELINES FOR ALL TYPES OF ELECTRICAL INSTALLATIONS. IT'S UPDATED EVERY THREE YEARS.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - AN ORGANIZATION THAT PUBLISHES STANDARDS SUCH AS THE NATIONAL ELECTRICAL CODE (NEC) (NFPA70) AND THE LIGHTNING PROTECTION STANDARDS (NFPA 780).

OHM - THE UNIT OF MEASUREMENT OF ELECTRICAL RESISTANCE. ONE OHM OF RESISTANCE WILL ALLOW ONE AMPERE OF CURRENT TO FLOW THROUGH A PRESSURE OF ONE VOLT. SEE ALSO **RESISTANCE**.

LYNCOLE GLOSSARY OF TERMS

OHM'S LAW - THE FORMULA ESTABLISHING THE RELATIONSHIP BETWEEN VOLTAGE, CURRENT AND RESISTANCE. USUALLY EXPRESSED AS $V = I * R$ WHERE V IS THE VOLTAGE, I IS THE CURRENT AND R IS THE RESISTANCE.

POTENTIAL - THE WORK REQUIRED TO BRING A UNIT ELECTRICAL CHARGE, MAGNETIC POLE OR MASS FROM AN INFINITELY DISTANT POSITION TO A DESIGNATED POINT IN A STATIC ELECTRIC, MAGNETIC OR GRAVITATIONAL FIELD, RESPECTIVELY.

POWER - THE MEASUREMENT OF ELECTRICAL WORK, USUALLY MEASURED IN WATTS. SEE ALSO **WATT**.

RESISTANCE - THE OPPOSITION TO THE FLOW OF CURRENT IN AN ELECTRICAL CIRCUIT. SEE ALSO **OHM**.

SOIL RESISTIVITY - RESISTANCE PER UNIT OF AREA OR VOLUME, MEASURED IN OHMS METER; THE RECIPROCAL OF CONDUCTIVITY.

SURGE PROTECTION DEVICE (SPD) - A DEVICE THAT WILL PROTECT EQUIPMENT FROM DAMAGE CAUSED BY SURGES, SPIKES AND OTHER OVER VOLTAGES. SEE ALSO **TRANSIENT VOLTAGE SURGE SUPPRESSION**.

THERMOWELD - A BRAND OF EXOTHERMIC WELD.

TRANSIENT VOLTAGE SURGE SUPPRESSION (TVSS) - A DEVICE THAT WILL PROTECT EQUIPMENT FROM DAMAGE CAUSED BY SURGES, SPIKES AND OTHER VOLTAGES. THE CORRECT TECHNICAL TERM IS SURGE PROTECTION DEVICE. SEE ALSO **SURGE PROTECTION DEVICE**.

UFER GROUND - A GROUNDING SYSTEM COMPRISED OF REINFORCING RODS THAT ARE CONTAINED IN THE CONCRETE WALLS AND FOOTINGS. ELECTRICAL CONNECTIONS ARE MADE DIRECTLY TO THE METAL REINFORCING BARS. NO LONGER THE CORRECT TECHNICAL TERM. THE CORRECT TECHNICAL TERM IS CONCRETE ENCASED ELECTRODE. SEE ALSO **CONCRETE ENCASED ELECTRODE**.

UNDERWRITER'S LABORATORY (UL) - A NON-PROFIT ORGANIZATION THAT WAS ESTABLISHED BY THE INSURANCE INDUSTRY TO TEST DEVICES, MATERIALS AND SYSTEMS FOR SAFETY. IF AN ITEM PASSES UL SET STANDARDS, THE DEVICE IS MARKED AS UL LISTED.

UNINTERRUPTIBLE POWER SUPPLY (UPS) - A DEVICE THAT PROVIDES CONTINUOUS POWER IN CASE THE MAIN POWER SOURCE FAILS.

VOLT - THE UNIT OF MEASUREMENT OF ELECTRICAL FORCE. ONE VOLT WILL FORCE ONE AMPERE OF CURRENT TO FLOW THROUGH A RESISTANCE OF ONE OHM.

WATT - THE UNIT OF MEASUREMENT OF ELECTRICAL POWER OR RATE OF WORK EQUAL TO ONE JOULE PER SECOND. SEE ALSO **POWER** AND **JOULE**.

XIT[®] ROD - THE ORIGINAL, ACTIVE ELECTROLYTIC GROUNDING ROD. KEY COMPONENT OF THE COMPLETE LYNCOLE GROUNDING SYSTEM.