

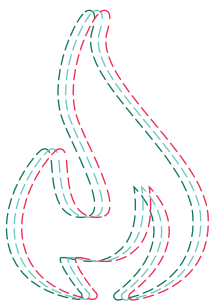
GLOSSARY OF TERMS

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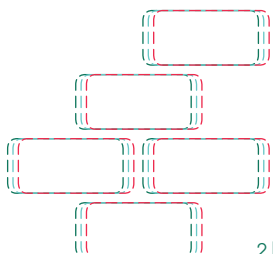
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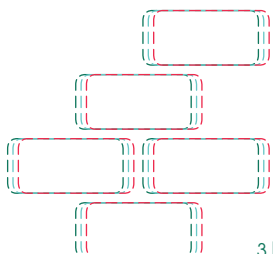


GLOSSARY OF STRUCTURAL TERMS

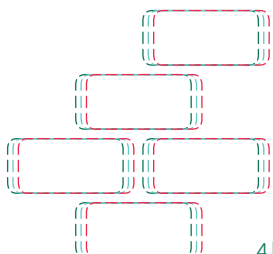
Aggregate:	The stones and sand (coarse and fine aggregate respectively) used as a filler in concrete, asphalt etc.
Angle:	Steel angle: a steel section whose cross-section is L-shaped.
Arch:	A basic form of masonry construction over window and door or other openings in Victorian and older buildings. They exert horizontal thrust at their bearings.
Ballast:	Mixed size aggregate (sand, gravel).
Beam:	A horizontal member of structure that carries vertical loads along its length.
Bending moment:	Bending Moment is the reaction induced in any structural member when an external force is applied to it causing the element to bend. Unit of bending moment is force X Distance.
Block:	Building unit of a regular size usually made of solid or aerated concrete.
Bolt:	Threaded fastener used (with a nut and washers) for connecting building components, particularly steel and/or timber.
Bond:	The arrangement or pattern of bricks (or other masonry units) in a wall. Each unit should overlap the unit below by at least one quarter of a unit's length, and sufficient bonding bricks should be provided to prevent the wall splitting apart.
Bonding plaster:	A proprietary type of plaster with good adhesive properties. It must be used with care as it is hygroscopic, i.e. it will readily absorb atmospheric or rising moisture.
Brace, Bracing:	Diagonal members (or rigid members/ shear wall) providing lateral stability to a building structure.
Brick:	Building unit of a regular size usually made of baked clay.
Brick tie:	A metal or plastic component to tie together the two leaves of a cavity wall. Older galvanized ties tend to rust away and have to be replaced.
Cantilever:	Overhanging beam, roof or floor slab supported from one side only.
Cement:	A powder which when mixed with water forms a paste that hardens with time. Cement is mixed with sand to make mortar or render, and with stone chips added it is known as concrete.
Cement mixer:	Mechanical device consisting of a rotating drum with fixed paddles inside, used for mixing cement with aggregate and water to produce concrete, mortar, or any other cement-based mixture.
Channel:	A structural steel component, which is C-shaped in cross section.
Circular hollow section:	A structural steel component in the shape of a round tube.
Cladding:	The separately-applied exterior finish (e.g ceramic brick) of a framed building.
Coarse aggregate:	Any aggregate larger than fine aggregate. Gravel. Available with a maximum size of 10, 20 or 40mm.
Compression:	The pressing force experienced in a column or in the top flange of a beam
Computer aided design (CAD):	The type of computer program with which technical drawings are prepared.
Concrete:	An artificial stone-like substance obtained by mixing large and small stones and sand with cement and enough water to make the mix workable. Concrete (like the stone minerals from which it is made) is strong in compression but weak in tension.
Corrugated sheet:	Sheet formed into a ridged shape, used for roofing and cladding.



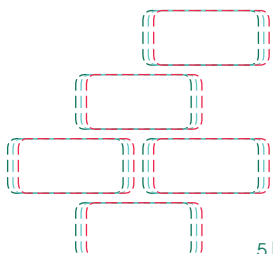
Cure:	Curing is the maintenance of moisture content which influences the hardening of concrete.
Dead load:	The weight of the materials that form a permanent part of the structure, as opposed to imposed load.
Design check:	Evaluation of the design to determine whether it conforms to the design brief and can be expected to provide a safe engineered solution.
Development length:	Length to which a reinforcing steel element must be anchored into concrete for it to work at full capacity
Dowel:	(Concrete) A steel bar for transferring load across a joint.
Effective length:	A concept used in the design of structural members. May be more or less than the actual length to compensate for the degree of restraint of the ends of the member, a member which is more rigidly held at the ends being stronger.
Engineering brick:	Engineering bricks are a type of brick used where strength, low water porosity or acid resistance are needed.
Fine aggregate:	Sand used in making concrete, mortar etc.
Flange:	The top and bottom (horizontal) plates of an I- or H-beam. The top and bottom flanges of a beam are usually in compression and tension respectively
Foot:	Unit of length in the Imperial system; one-third of a yard, equal to 304.8mm.
Force:	That which can accelerate a mass. An example of a force is weight, which acts to accelerate any mass towards the center of the earth.
Formwork:	A steel or wood mould into which concrete is cast.
Foundation	The part of a building or structure on which the building rests, which transmits load to the soil. Common foundations are footing, raft or piled.
Gravel:	Naturally occurring ballast or coarse aggregate.
Groundwork:	Foundations, drainage, levelling and other building operations involving digging.
Grout:	Cement mixed with enough water to make it runny, used to fill a gap under the base of a steel column. Also the filler between wall tiles.
H-section:	A steel component shaped in cross-section like an H
Handrail:	A length of material at hand height at the side of a staircase or landing.
High tensile steel:	A grade of steel stronger than mild steel, which may be used both in structural steelwork and concrete reinforcement.
Hoist:	An elevator for lifting goods usually, people up a scaffold.
Hollow section:	A tubular structural steel member.
I-section:	A structural steel section shaped like an I
Imposed load:	The weight of furniture, people, storage, and any other non-permanent loads.
Jointing:	The process of finishing the mortar between bricks or other masonry units at the time of building, as opposed to pointing the joint later.
Joist:	(Timber) Horizontal member which is one of a group running parallel and close together, supporting a floor or flat roof.
Lintel	A short beam over a door or window opening; may be steel, concrete
Live load:	Imposed load due to occupation.
Load bearing:	Designed to support a load in addition to its own weight.
Load factor:	Engineers design structures to support loads, which are more than the maximum load expected. The actual loads are calculated as accurately as possible and then multiplied by the factor.



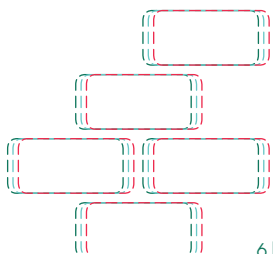
Masonry:	In general usage this describes work constructed of stone, but technically the term masonry also includes brickwork and blockwork.
Mass:	A property of all matter. It is measured in, for example, grams.
Mass concrete:	Unreinforced concrete, as often used in foundations or ground floor slab on soil where the added strength of reinforcement is not required.
Mix:	The proportions of the ingredients of concrete (cement, sand and brick/stone chips)
Mortar:	A binder for masonry (cement and sand).
Newton:	The principal SI unit of force.
Overstress	Element which is stressed beyond its design capacity
Partition:	A non load bearing wall between rooms or areas in a building such as 5" wall.
Permissible stress:	Stress that can be sustained safely. Codes of Practice for structural design used to specify permissible stresses with which the actual stress was to be compared.
Pile:	A foundation consisting of a deep column extending down into the ground, used when the foundation needs to get support from a deeper and stronger or more stable layer.
Pile cap:	A (normally reinforced concrete) structure transferring loads from the building into the piles.
Pitch:	Of roofs, the angle of the rafters from the horizontal. Traditionally the pitch was expressed as the number of vertical inches corresponding to twelve horizontal inches, thus a 45 degree roof was described as a twelve inch pitch.
Plaster:	The material which is spread to leave a smooth surface on a wall or ceiling. The main binding material may be cement and have a filler like sand.
Plumb:	Vertical or verticality, measured using a plumb-line or plumb-rule or these days a spirit level.
Portal frame:	A structural frame consisting of two columns and a cross- beam, with rigid connections. Often used for single-storey warehouses and workshops. The crossbeam is often formed as two rafters to make a pitched roof shape.
Precast concrete:	Concrete components made in a factory or yard and transported to the site.
Prestressed concrete:	Concrete strengthened with steel wires, which are stressed before the concrete is poured.
Progressive collapse:	The process wherein the collapse of part of a building leads to the collapse of an adjacent part in 'house of cards' fashion.
Purlin:	A horizontal structural member which supports a sloping roof covering, with or without rafters, and which carries the roof loads to the primary framing members
Rafter:	Sloping structural member supporting a roof.
Ready-mixed concrete:	Concrete mixed in a batching plant and delivered in ready-mix trucks.
Rectangular hollow section:	A structural steel component in the shape of a steel tube with a rectangular cross section.
Reinforcement:	(Also known as rebar). Steel bars for reinforcing concrete. They are bent into special shapes according to the Engineer's bending schedule, and fitted into the correct position by a skilled operative called a steel fixer.



Reinforced concrete:	Concrete reinforced with steel bars to make a versatile structural material, which is very strong in bending, shear, tension and compression, unlike plain concrete, which is strong only in compression.
Render:	Cement-based wall plaster.
Retaining wall:	Retains soil on one side. May be made of masonry, reinforced concrete, or various other traditional or proprietary structural systems.
Riser:	Vertical board rising from the back of one tread of a staircase to the front of the next.
Rolled steel joist (RSJ):	One of a range of I- and H-shaped steel members.
Sand:	Aggregate consisting of mineral particles whose size is generally less than 5mm; fine aggregate.
Screed:	A temporary rail, installed at a specific level, to enable concrete to be finished at the correct level. Also sand and cement, mixed rather dry, laid on a (usually concrete) floor and screeded and trowelled to make a smooth surface.
Secant piles:	Contiguous piles where each pile cuts into the one before, to make a more-or less waterproof retaining-wall.
Settlement:	The small downwards movement of foundations when the weight of the building comes onto them, due to compression of the soil.
Shear or shear force:	The force which tends to make the top and bottom flanges or fibres of a beam move parallel to one another. The web of the beam resists the shear force, which is at its greatest at the ends of the beam next to where it rests on its supports.
Shingle:	Aggregate consisting of stones whose size is between 5 and 10mm.
Shuttering:	Wood in planks or strips used as a temporary structure to contain setting concrete
Simply supported:	Describes a beam which rests on a support at each end, that is, it is not supported at more than two points, is not held rigidly by the supports, and does not form part of a larger framework.
Skirting:	Timber or other moulding around the base of a wall.
Sleeper wall:	Supports a timber ground floor, and is often built in honeycomb brickwork to allow ventilation of the space under the floor.
Soffit:	The underside of a building component such as a lintel or beam. A board fitted to the underside of the ends of rafters or flat roof joists.
Square hollow section:	A structural steel section in the shape of a square tube.
Steel:	A metal based on iron, with the addition of carefully defined quantities of carbon and other elements to produce a metal with specific qualities.
Strain:	The amount by which something has changed length, measured as a percentage of its original length.
Stress:	Force divided by area, measured in (for example) Newtons per square millimetre, or pounds per square foot.
Structural Engineering:	Structural engineering is a field of engineering dealing with the analysis and design of structures such as buildings and bridges that support or resist loads.
Structural steelwork:	A frame of steel sections supporting other parts of the structure.
Temporary works:	Propping or shoring to enable the permanent works to be carried out.
Tension:	A pulling force, such as that experienced by a cable, or in the bottom flange of a beam with a load on it.

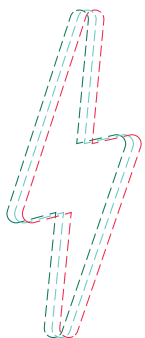


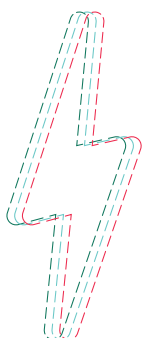
Tie:	Any member which provides a tensile force to tie two other members together, especially, the bottom horizontal member of a roof truss, and (in a steel framed structure) steel beams whose main function is to tie columns together.
Tile:	Ceramic unit for wall decoration or roof weathering.
Timber:	Wood suitable for use in construction.
Tread:	A single step of a staircase.
Truss:	An arrangement of steel or timber components designed to span across a large distance to support a roof, floor or bridge.
Trussed rafters:	Wooden trusses, usually triangular in shape, spanning between the external walls.
Underpinning:	Making existing foundations deeper (by extending them downwards). Usually done with mass concrete but other high- and low-tech methods are available.
Universal Beam:	A standardised steel component, which is I-shaped in cross section.
Universal Column:	A standardised steel component, which is H-shaped in cross-section.
Variation:	A change to the building contract due to an instruction issued by the Contract Administrator.
Web:	The vertical middle plate of an I-beam, H-beam or channel. The web connects the two flanges, and resists shear forces.
Weight:	A force resulting from the effect of gravity on a mass.
Welding:	A technique for joining steel components by the deposition of small drops of molten steel which bonds to the parent metal.
Wind load:	Load on the building structure due to effect of wind.



GLOSSARY OF ELECTRICAL TERMS

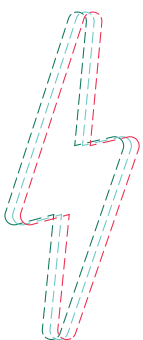
A	Ampere, unit of current
ATS	Automatic Transfer Switch
BDB	Branch Distribution Board
BDT	Bangladesh Taka
BNBC	Bangladesh National Building Code
BS	British Standard
CB	Circuit Breaker
COS	Change of Switch(manual type)
DB	Distribution Board
DESCO	Dhaka Electricity Supply Company
DG	Diesel based Generator
DOF	Drop Out Fuse
ECC	Earth Continuity Conductor
ELC	Earth Lead Conductor
EPM	Electrical Preventive Maintenance
ESA	Electrical Safety Audit
FDB	Floor Distribution Board/ Fuse Distribution Board
GG	Gas based Generator
HT	High Tension
HV	High Voltage
KVA	Kilo Volt Ampere
KVAR	Kilo Volt Ampere Reactive
KW	Kilo Watt
LA	Lightning Arrestor
LPS	Lightning Protection System
LT	Low Tension
LV	Low Voltage
MCB	Miniature Circuit Breaker
M/C	Machine
MCCB	Molded Cased Circuit Breaker
MDB	Main Distribution Board
MW	Mega Watt
N/A	Not Applicable
NEC	National Electric Code
NFPA	National Fire Protection Association
O & M	Operation & Maintenance
OHS	Occupation Health & Safety
PDB	Power Development Board
P F	Power Factor
PFI	Power Factor Improvement
PPE	Personal Protective Equipment
REB	Rural Electrification Board





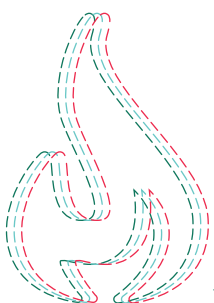
SDB	Sub Distribution board
SLD	Single Line Diagram
V	Volt/Voltage
W	Watt
BBT	Bus Bar Trunking; an enclosed arrangement to distribute power from one end to other end. It's a safer arrangement for tapping additional connection and also for socket points; Bus ways.
Bonded	Connected to establish electrical continuity conductivity
Bonding Jumper	The connection between two or more portions of the equipment grounding conductor.
Branch Circuit	The circuit conductors between the final over current device protecting the circuit and the outlet
Building	A structure that stands alone or that is cut off from adjoining structures by fire walls with all openings therein protected by approved fire doors.
Cabinet	An enclosure that is designed for either surface mounting or flush mounting and is provided with a frame, mat, or trim in which a swinging door or doors are or can be hung.
Cable gland/ glands	Mechanical cable entry/exit device constructed from metallic or non-metallic materials. They are designed to provide strain-relief to the cables. They may also be used for sealing cables passing through plates.
Circuit Breaker	A device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself when properly applied within its rating.
Concealed	Rendered inaccessible by the structure or finish of the building.
Cut-out Box	An enclosure designed for surface mounting that has swinging doors or covers secured directly to and telescoping with the wall of the box proper
Device	A unit of an electrical system, other than a conductor, that carries or controls electric energy as its principal function.
Disconnecting means	A device, or group of devices, or other means by which the connectors of a circuit can be disconnected from their source of supply.
Earthing/ Grounding	Connected (connecting) to ground or to a conductive body that extends the ground connection.
Earth Electrode	A metal rod that is bored intentionally in deeper soil level to clear electrical fault
Earth Pit	An arrangement to enclose the earth electrode on ground; basically it is used for identification of earth electrode.
Earth Resistance	It is the resistance measured at the top of the earth electrode in an earth pit. It's value must be lower than 1.
Enclosure	The case or housing of apparatus, or the fence or walls surrounding an installation to prevent personnel from accidentally contacting energized parts or to protect the equipment from physical damage.
Equipment	A general term, including fittings, devices, appliances, luminaires, apparatus, machinery, and the like used as a part of, or in connection with, an electrical installation.
Feeder	All circuit conductors between the service equipment, the source and the final branch-circuit overcurrent device.
Fitting	An accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function
Hotspot	Any temperature higher than normal during operation

Insulation	Suitable non-conducting material, enclosing, surrounding or supporting a conductor.
Live parts	Energized conductive components.
Lug/Lugs	Electrical connector used for cable termination either to bus-bars or any terminal box of equipment.
M.C.C	Motor Control Center. An assembly of one or more enclosed sections having a common power bus and principally containing motor control units.
Neutral Conductor	The conductor connected to the neutral point of a system that is intended to carry current under normal conditions.
Neutral point	The common point on a wye-connection in a polyphase system or midpoint on a single-phase, 3-wire system, or midpoint of a single-phase portion of a 3-phase delta system, or a midpoint of a 3-wire, direct-current system.
Overcurrent	Any current in excess of the rated current of equipment or the capacity of a conductor. It may result from overload, short circuit, or ground fault.
Overload	Operation of equipment in excess of normal, full-load rating, or of a conductor in excess of rated capacity that, when it persists for a sufficient length of time, would cause damage or dangerous overheating. A fault, such as a short circuit or fault is not an overload.
Panel board	A single panel or a group of panel units designed for assembly in the form of a single panel including buses, automatic overcurrent devices, and with or without switches for the control of light, heat, or power circuits, designed to be placed in a cabinet or cut-out box placed in or against a
Qualified person	One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved.
Raceway	An enclosed channel of metallic or non-metallic materials designed expressly for holding wires, cables, or bus bars, with additional functions.
Cable tray system	A unit or assembly of units or sections and associated fitting a structural system used to securely fasten or support cables.
Service	The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.
Service cable	Service conductors made up in the form of a cable.
Service equipment	The necessary equipment, usually consisting of a circuit breaker(s) or switch(es) and fuse(s) and their accessories, connected to the load end of service conductors to a building or other structure, or an otherwise designated area, and intended to constitute the main control an cut-off of the supply.
Service lateral	The underground conductors between the utility electric supply system and the service point.
Service point	The point of connection between the facilities of the serving utility and the premises wiring.
Substation	An enclosed assemblage of equipment (e.g., switches, interrupting devices, circuit breakers, buses, and transformers) through which electric energy is passed for the purpose of distribution, switching, or modifying its characteristics.
Switchgear	An assembly completely enclosed on all sides and top with sheet metal and containing primary power circuit switching, interrupting devices, or both, with buses and connections. The assembly may include control and auxiliary devices. Access to the interior of the enclosure is provided by doors, removable covers, or both.



GLOSSARY OF FIRE SAFETY TERMS

Antiquated	Out-dated, old, discontinued, not in compliance with current requirements
Common Path of Travel	The portion of exit access that must be traversed before two separate and distinct paths of travel to two exits are available. Common path of travel is measured in the same manner as travel distance but terminates at that point where two separate and distinct routes become available. Paths that merge are common paths of travel.
Dead End Corridor/Aisle	A dead end exists where an occupant enters a corridor thinking there is an exit at the end and, finding none, is forced to retrace the path travelled to reach a choice of egress
Exit Discharge	That portion of a means of egress between the termination of an exit and a public way.
Fire Rated Construction	Construction that meets the requirements of the applicable fire rating, which includes walls, floors, ceilings, doors and windows.
Fire Rated Separation	Separation of an area from another area by fire rated construction, which includes fire resistant construction, fire rated doors/windows and penetrations, which are sealed by fire rated materials.
Grade	Finished ground level
Listed	Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials, and whose listing states that either the equipment, or material, meets appropriate designated standards. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.
Means of Egress	A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit, and (3) the exit discharge.
Occupant Load	The calculated maximum number of persons allowable per floor depending on available egress capacity
Reportedly	According to management, not verified.
Travel Distance	The maximum length of exit access travel, measured from the most remote point within a story along the natural and unobstructed path of egress travel to an exit door.
Unprotected openings	Openings in fire rated separation, which are not protected by fire rated doors, windows or other type of arrangement.



● COLOPHON

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