

TYPES OF CONSTRUCTION

**TABLE NO. 17-A-TYPES OF CONSTRUCTION-
FIRE-RESISTIVE REQUIREMENTS**
(In Hours)

For details see chapters under Occupancy and Types of Construction; for exceptions see Section 1705.

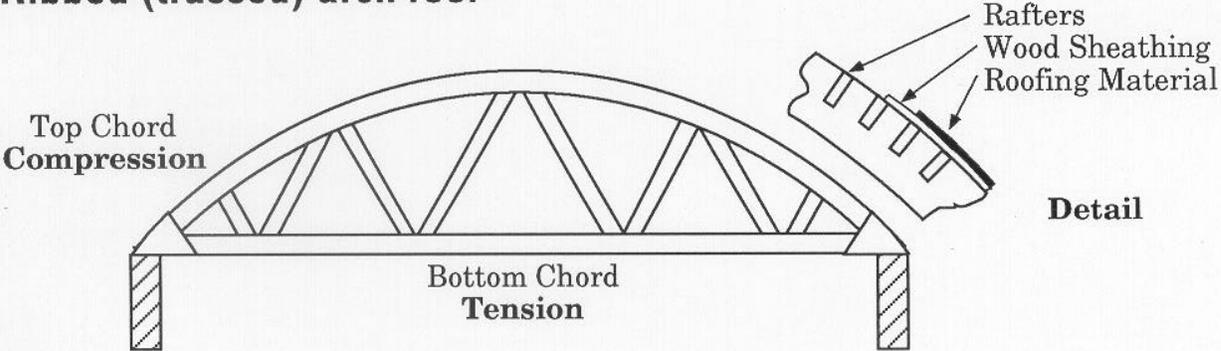
BUILDING ELEMENT	NON COMBUSTIBLE		COMBUSTIBLE				
	TYPE I	TYPE II	TYPE III	TYPE IV	TYPE V	TYPE V	
Exterior Bearing Walls	Fire- resistive 1803 (a)	Fire- resistive 1903 (a)	1-Hour N	1-Hour N	H.T. 2103 (a)	1 Hour N	N
Interior Bearing Walls	4 Sec. 1803 (a)	4 1903 (a)	1	1	1	1	N
Exterior Non-bearing Walls	4 Sec. 1803 (a)	4 1903 (a)	1 1903 (a)	N	4 2003 (a)	4 2003 (a)	4 2103 (a)
Structure Frame (Note 1)	3	2	1	N	1	N	1 or H.T. 1
Partitions-Permanent	1	Note (2)	1	N	A	N	1 or H.T. 1
Shaft Enclosures	2	2	1	1	1	1	1706
Floors-Ceilings/Roofs	2	2	1	N	1	N	H.T. 1
Roofs-Ceilings/Roofs	1806	1906	1906	N	1	N	H.T. 1
Exterior Doors and Windows	1803 (b)	1903 (b)	1903 (b)	1903 (b)	2003 (b)	2003 (b)	2103 (b)
							2203

N-No general requirement for fire resistance H.T.-Heavy Timber.

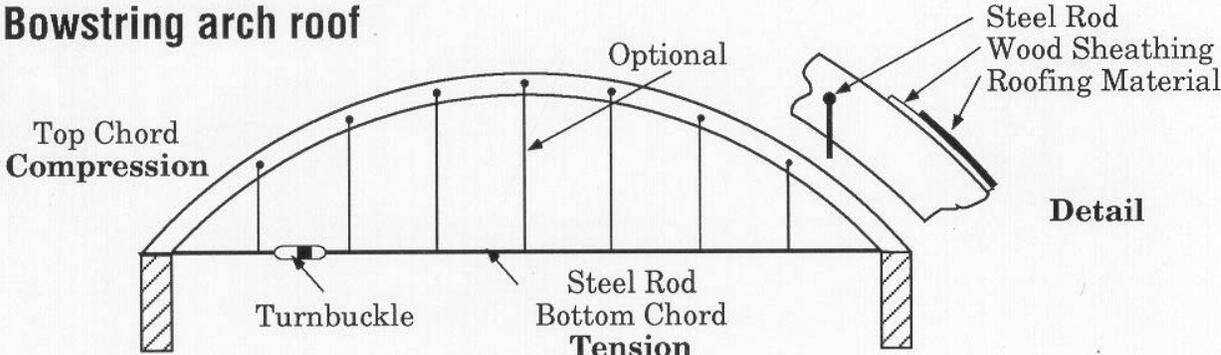
Note 1: Structural frame elements in the exterior wall shall be protected against external fire exposure as required for exterior bearing walls or the structure frame, whichever is greater.

Note 2: Fire-retardant treated wood (see Section 407) may be used in the assembly, provided fire-resistance requirements are maintained. See Sections 1801 and 1901, respectively.

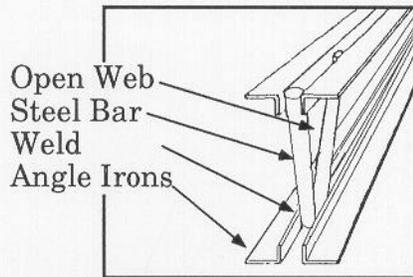
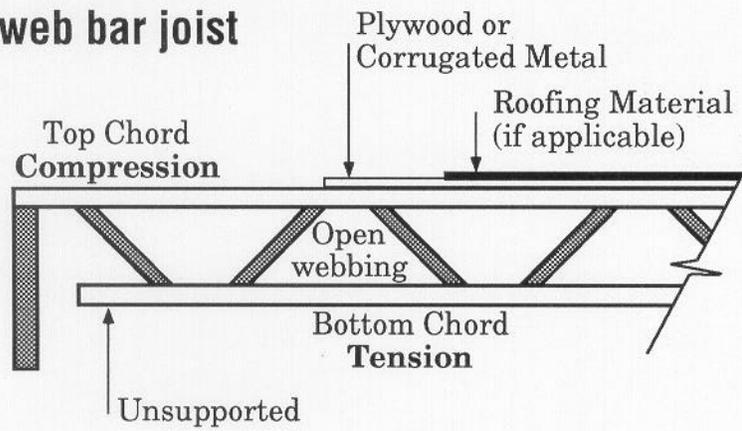
Ribbed (trussed) arch roof



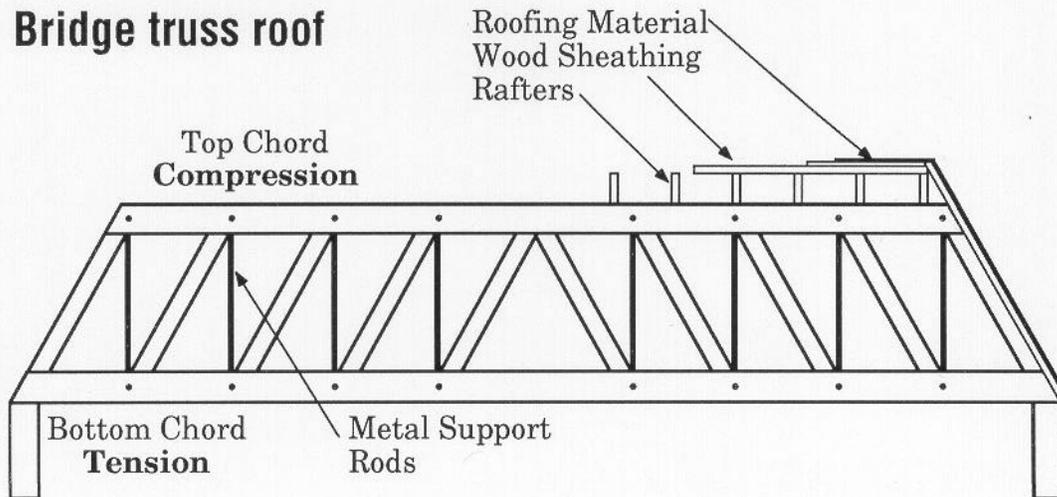
Bowstring arch roof



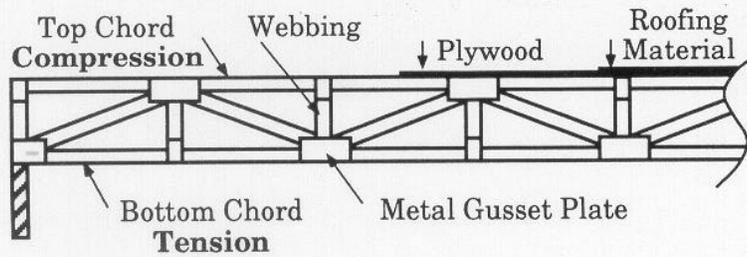
Open web bar joist



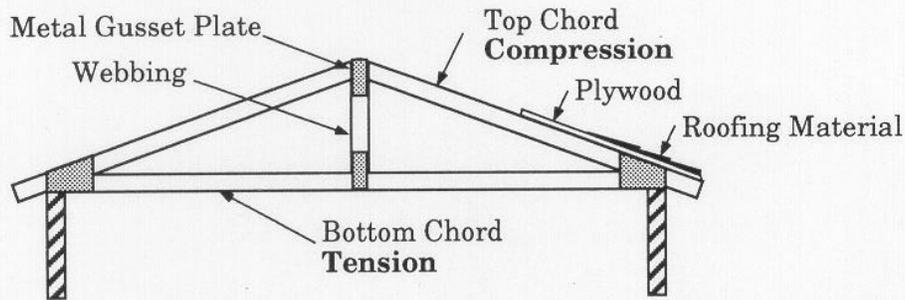
Bridge truss roof



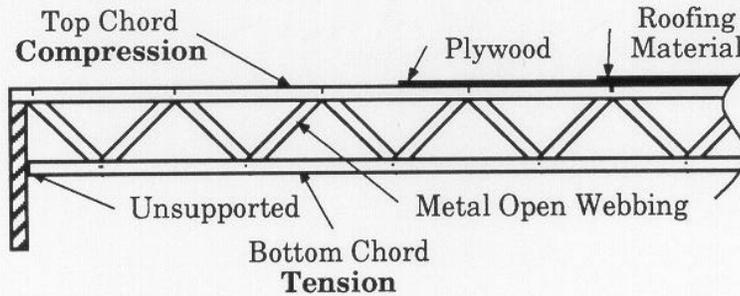
Metal gusset plate construction



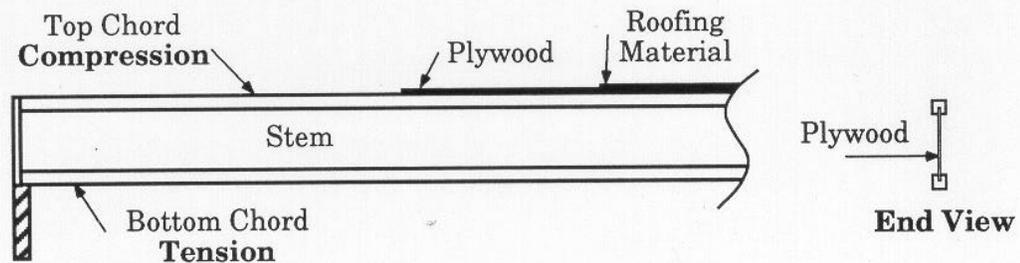
Gable Roof (lightweight)



Open web construction



Wooden "I" beam



GLOSSARY

AGGREGATE	The gravel, stone, sand, or other inert materials used in concrete
AIR-ENTRAINED CONCRETE	Concrete with air entrapped in its structure to improve its resistance to freezing
ALUMINIZE	To coat with aluminum
ANCHOR	A metal device used to hold down the ends of trusses or heavy timber members at the walls
ASTM	American Society for Testing and Materials
BACKFILL	Coarse dirt or other material used to build up the ground level around the foundation walls to provide a slope for drainage away from the foundation
BACKSPLASH	The vertical surface at the back of a countertop
BALUSTER	The vertical member supporting a handrail
BATT INSULATION	Blanket insulation cut in widths to fit between studs and in short lengths to facilitate handling
BAY	The space between bent, beams, or between rows of columns considered in transverse planes
BEAM	A structural member subjected to loads perpendicular to its length
BENCH MARK	A mark on some object firmly fixed in the ground from which distances and elevations are measured
BENT	Supporting legs of a bridge in a plane perpendicular to its length
BIFOLD DOORS	Doors designed to fold in half vertically
BLANKET	A thick layer of insulating material between two layers of heavy waterproof paper
BLOSTER	A device made of bent wire used to hold several reinforcing bars in position

BRICK VENEER	A single thickness of brick wall facing placed over frame construction or masonry other than brick
BRIDGING	Diagonal bracing between joists
BUTTRESS	A structure projecting from a wall designed to receive lateral pressure action at a particular point
CAMBER	A low vertical curve placed in a beam or girder to counteract deflection caused by loading
CANT STRIP	An angular board installed at the intersection of a roof deck and a wall to avoid a sharp right angle when the roofing is installed
CANTILEVER	Projecting beam or slab supported at one end
CALK (CAULK)	A non-hardening paste used to fill cracks and crevices
CARRIAGE (ALSO STRINGER)	The main support for the stair treads and risers
CHAIR	A device of bent wire used to hold reinforcing bars in position
CHORD	Main members of trusses as distinguished from diagonals
CLADDING	The exterior finish or skin
CLERESTORY	A windowed space which rises above lower stories to admit air, light or both
COFFER DAM	A watertight enclosure usually made of sheet piling which can be pumped dry to permit construction inside
COLUMN	A vertical supporting member
COMBPLATE	A cleated plate located adjacent to the point where escalator steps move below the floor surface
COMMON BRICK	A fired clay brick with a plain, unfinished surface
COMPRESSION	A force which tends to push the mass of a material together

CONVENIENCE	An electrical outlet which can be used for lamps and other OUTLET appliances
COPE STEEL	Construction: to cut a flange section in order to avoid interference with other member. Carpentry: to cut a piece of molding to fit another piece joining it at an inside corner
CORNICE	A horizontal projection which crowns or finishes the eaves of a building
CURING	Maintaining conditions to achieve proper strength during the hardening of concrete
DATUM POINT	A point of reference established by a city from which levels and distances are measured
DEAD LOAD	The load on a structure due to its own weight and other fixed weights
DEFORMATIONS	Projections on the surface reinforcing bars to prevent the bars from slipping through the concrete
DRAFT CURTAIN	A noncombustible barrier extending down from the ceiling to impede the flow of heat
DROP PANEL	A type of concrete floor construction in which an area above each column is dropped below the bottom level of the rest of the slab
DRYWALL	A system of interior wall finish using sheets of gypsum board and joints
EFFLORESCENCE	Crystals of salt appearing as a white powder on the surface
ELEVATION	Measurement: the height of point above sea level or some datum point. Drafting: the drawing or orthographic view of any of the vertical sides of a structure or vertical views of interior walls
EXPANSION JOINT	A flexible joint in concrete used to prevent cracking or breaking because of expansion and contraction due to temperature changes
EXTRUDE	To shape heated plastics or metal by forcing them through dies
FAN LIGHT	A semicircular window, usually over a doorway, with separations radiating like the ribs of a fan

FASCIA	A flat vertical board located at the outer face of a cornice
FILLET WELD	A weld made in the interior angle of two pieces placed at right angles to each other
FIRE CUT	An angled cut made at the end of a joist or wood beam which is inserted into a masonry wall
FLASHING	Sheet metal used in roof and wall construction to keep water out
FLAT SLAB	A type of concrete floor construction which provides a flat surface for the underside of the floor
FLIGHT	A series of steps between two landings
FOIL BACK	Blanket or batt insulation with one surface faced with metal foil which serves as a vapor barrier and heat reflector
FOOTING	That part of the building which rests on the bearing soil and is wider than the foundation wall. Also the base for the column.
FRONT STRINGER	The stringer that supports the side of the stairs with a balustrade
FURRING	Wood strips fastened to a wall, floor, or ceiling for the purpose of attaching covering material
GAGE LINES	(Steel construction) Lines parallel to the length of a member on which holes for fasteners are placed. The gage distance is the normal distance between the gage line and the edge or back of the member.
GIRDER	A large, horizontal, structural member used to support the ends of joists and beams
GRADE BEAM	A concrete wall foundation in the form of a strong reinforced beam which rests on footings or caissons spaced at intervals
GUSSET PLATE	A plate that is used to connect the members of a wood or metal truss
HANDRAIL	The top piece of a balustrade that is grasped when ascending or descending a stairway. Handrails may be attached to the wall in close stairways

HEAD	The top of a window or door frame
HIP	The junction of two sloping roof surfaces forming an exterior angle
HYDRATION	The chemical process in which concrete changes to a solid state and gains strength
INSERT	(Concrete) A metal anchor placed in a concrete wall or beam to which shelf angles are attached
INSULATING GLASS	Two panes of glass separated by an air space and sealed around the edge
JOIST	A framing member which directly supports the floor
KILN DRIED	A term applied to lumber which has been dried by artificially controlled heat and humidity to a prescribed moisture content
KIP	One thousand pounds
KRAFT PAPER	A strong brown paper made of sulfate pulp
LAGGING	Heavy sheathing used in underground work to withstand earth pressure
LAG SCREW	Large wood screw with a hexagonal or square head for turning with a wrench
LAMINATED	Sheet material made of lamination of cloth or other fiber PLASTIC impregnated with plastic and brought to the desired thickness or shape with heat and/or pressure
LAMINATION	(Heavy Timber) One of several layers of lumber making up a laminated beam
LANDING	The floor on each story where a flight of stairs begins and ends
LEDGER	(Concrete construction) A horizontal framework member, especially one attached to a beam side that supports the joists
LIFT	(Concrete work) The dimension from the top of one pouring of concrete in a form to the top of the next pouring, e.g., "Pour concrete in 8-inch (203 mm) lifts."

LIFT SLAB	A system of concrete construction in which the floor slabs are poured in place at the ground level and then lifted to their position by hydraulic jacks working simultaneously at each column
LIGHT	A pane of glass
LINTEL	A support for masonry over an opening, usually made of steel angles or other rolled shapes singularly or in combination
LIVE LOAD	All furniture, people, or other movable loads not included as a permanent part of the structure
MILL	One thousandth of an inch (.001 inch {0.254 mm})
MODULAR MEASURE	A system of measurement designed to have the parts fit together on a grid of a standard module. The module is four inches (102 mm)
MULLION	The vertical division between multiple windows
MUNTIN	The small members dividing the glass lights in a window sash
NEAT CEMENT	A pure cement uncut by a sand mixture
NEWEL	The outer posts of balustrades and the stiffening posts at the angle and platform of stairways
NOSING	The projection of a tread beyond the face of a riser
OPEN STRINGER	A stringer that is notched to follow the lines of the treads and risers
ORIENTATION	(1) The direction in which a building faces (2) Relating blueprints to the actual structure with respect to direction
OVERBURDEN	Loose earth covering a building site
PANEL POINTS	Points where the load of roof panels are transferred to trusses
PARAPET	A low wall at the edge of a roof
PARQUET FLOORING	Usually of wood, laid in an alternating or inlaid pattern to form various designs. The flooring strips may be glued together to make square units
PARTITION	An interior wall which separates a space into rooms

PENTHOUSE	A room or building build on the roof, usually to cover stairways, house elevator machinery, contain water tanks and/or heating and cooling equipment
PIER	A supporting section of wall between two openings. Also a short masonry column
PILASTER	A rectangular masonry column built into a wall
PITCH	(Steel construction) Spacing between rivet centers. General construction: the slope of a roof expressed as a ratio of rise to span
PLANCIER	A board which forms the underside of an eve or cornice
PLAT	A drawing of a parcel of land giving its legal description
PLATE	(Frame construction) The top or bottom horizontal structural member or a frame wall or partition
PLATFORM	Intermediate landing between floors to change the direction of a stairway or to break up excessively long flights
POLYETHYLENE MEMBRANE	A type of plastic sheet used for water proofing
PORCELAINIZE	To coat with ceramic material
PRESTRESSING	A means whereby the reinforcing bars in concrete beams are placed in tension before a concrete is poured so that the member will develop greater strength after the concrete has set
PURLIN	A horizontal member between trusses which supports the roof
RABBET	A groove cut in the surface or on the edge of a board to receive another member
RAFTER	A beam that supports a roof
REGLET	A water seal for roofing in a parapet wall (also the masonry units)
RIBBON	(Frame construction) A narrow strip of board cut to fit into the edge of studding to help support joists

RIGID CONDUIT	Nonflexible steel tubing used for a passage of electrical conductors
RISE	The vertical distance between treads or of the entire stairs
RISER	General: the vertical part of a stair step. Plumbing: a vertical water supply line
ROLLED SHAPE	A structural steel member made by passing a hot steel billet between shaped rollers until it reaches the required shape and dimensions
ROMAX	A trade name for nonmetallic shielded cable
ROWLOCK	A method of laying brick on edge so that the vertical ends appear in the face of the wall
SALAMANDER	A portable heater used on construction jobs
SANITARY SEWER	Underground pipe used to carry off waste from water closets and from other drains
SANITARY TEE	A soil pipe fitting with a side outlet to form a tee shape. The side outlet extends with a smooth radius to permit unhampered flow in the fitting
SAWTOOTH ROOF	A roof with a profile of vertical and sloped surfaces resembling a saw
SCREED	Two or more strips set at desired elevation so that concrete may be leveled by drawing a straightedge over their surface; also the straightedge
SETBACK	The distance from the street line to the front of a building
SHORE STRESS	The stress resulting when two forces act on a body in opposite directions in parallel adjacent planes
SHEATHING	The covering applied to the framing of a building to which siding is applied
SHELF ANGLES	Angles fastened to the face of a building at or near floor levels to support masonry or wall facing materials
SHOE	A metal plate device used at the bottom of heavy timber columns

SHORING	Temporary support for formwork
SILL	Frame construction: the bottom rough structural member which rests on the foundation. General construction: the bottom exterior member of a window or door or the masonry below
SITE	The location of a building or construction
SLAB	Steel construction: a heavy steel plate used under a steel column. Reinforced Concrete construction: the reinforced concrete floor itself
SLEEVE	A tube or pipe extending through a floor slab to provide openings for the passage of plumbing and heating pipes to be installed later
SOFFIT	A lower horizontal surface such as the undersurface of eaves or cornice
SOIL STACK	A vertical pipe which runs from the horizontal soil pipe to the house drain to carry waste, including that from water closets
SPALLING	Occurs when excess moisture trapped within the cement of the concrete expands. This expansion of the moisture results in tensile forces within the concrete, causing it to break apart
SPANDREL	That part of a wall between the head of a window and the sill of the window above it
STRAP	(Heavy timber construction) A metal piece used to hold joints in heavy timber construction together
STRATA	A sheetlike mass of rock or earth of one kind found in layers between layers of other kinds of material
STRESSED SKIN	The outer surface of a structure when it provides lateral support
STRINGER	Reinforced Concrete construction: horizontal structural member supporting joists and resting on vertical supports. General construction: the member on each side of a stair which supports the treads and risers
STUD	Vertical structural uprights which make up the walls and partitions in a frame building

TEMPERATURE BAR	(Reinforced Concrete construction) Reinforcing bar used to counteract stress caused by temperature changes
TIER	A horizontal division of a multi-story building, usually the stories in a steel frame building
TIE	Masonry veneer: a metal strip used to tie masonry wall to the wood sheathing. Concrete formwork: device used to tie the two sides of a form together
TONGUE AND GROOVE	A projection on the edge of a board that fits into a recess in an adjacent board
THREAD	The horizontal face of a step
TREMIE	A chute used to deliver concrete to the bottom of a caisson
TRUSSED RAFTER	(Frame construction) A roof truss which serves to support the roof and ceiling construction
UNDER-LAYMENT	Floor covering of plywood or fiberboard to provide a level surface for carpet or other resilient flooring
VAPOR BARRIER	A watertight material used to prevent the passage of moisture or water vapor into a through walls
VERMICULITE	Expanded mica used for loose fill insulation and as aggregate in concrete
VIBRATOR	A mechanical device used in placing concrete to make certain that it fills in voids. (A screed vibrator is a rotary surface vibrator)
VITRIFIED CLAY TILE	Ceramic tile baked to become very hard and waterproof