CLASS OF CONSTRUCTION

The Class of Construction is the basic subdivision in the *Marshall Valuation Service*, dividing all buildings into five basic cost groups by type of framing (supporting columns and beams), walls, floors and roof structures, and fireproofing.

Class A buildings have fireproofed structural steel frames with reinforced concrete or masonry floors and roofs.

Class B buildings have reinforced concrete frames and concrete or masonry floors and roofs.

Class C buildings have masonry or concrete exterior walls, and wood or steel roof and floor structures, except for concrete slab on grade.

Class D buildings generally have wood frame, floor, and roof structure. They may have a concrete floor on grade and other substitute materials, but are considered combustible construction. This class includes the pre-engineered pole- or post-frame, hoop and arch-rib-frame buildings.

Class S buildings have frames, roofs, and walls of incombustible metal. This class includes the pre-engineered metal buildings, including slant-wall and quonset structures.

In each class, there will be variations, combinations, and subclasses, but for purposes of pricing, the major elements of the building should be considered in selecting costs from the tables. Thus, if a building, which is otherwise in Class B, has a wood or steel truss roof, the costs for the Class B building may still be representative, or a Class C building may have concrete plank floors. Interpolations may be made if the appraiser feels the building overlaps two classes sufficiently or the Segregated Cost Sections may be used to modify the cost.

In most localities, some buildings are built which are hybrids in construction, such as those with complete Class A framing, including columns and girders, but with wood floor joists and sheathing. In all such hybrids, the appraiser must judge whether to adjust the costs or interpolate between classes and qualities.

Further details and sketches of the various construction types will be found on pages 5 through 9 of this section, as well as in Section 51, which has definitions and sketches of framing types. Building code and ISO Construction Classifications are referenced on pages 5 through 9. Those indicated are the classification before considering any adjustments for construction deficiencies or insurance rating purposes. For example, a building of Class 6 construction that is rated as Class 1 because of extensive insulation, not listed by UL, would still be valued as a Class 6 building.

CLASS OF CONSTRUCTION INDICATORS

CLASS	FRAME	FLOOR	ROOF	WALLS
A	Structural steel columns and beams, fireproofed with masonry, concrete, plaster, or other noncombustible material.	Concrete or concrete on steel deck, fireproofed.	Formed concrete, precast slabs, concrete or gypsum on steel deck, fireproofed.	Nonbearing curtain walls, masonry, concrete, metal and glass panels, stone, steel studs and masonry, tile or stucco, etc.
B	Reinforced concrete columns and beams. Fire-resistant construction.	Concrete or concrete on steel deck, fireproofed.	Formed concrete, precast slabs, concrete or gypsum on steel deck, fireproofed.	Nonbearing curtain walls, masonry, concrete, metal and glass panels, stone, steel studs and masonry, tile or stucco, etc.
C	Masonry or concrete load-bearing walls with or without pilasters. Masonry, concrete or curtain walls with full or partial open steel, wood, or concrete frame	Wood or concrete plank on wood or steel floor joists, or concrete slab on grade.	Wood or steel joists with wood or steel deck. Concrete plank.	Brick, concrete block, or tile masonry, tilt-up, formed concrete, nonbearing curtain walls.
D	Wood or steel studs in bearing wall, full or partial open wood or steel frame, primarily combustible construction.	Wood or steel floor joists or concrete slab on grade.	Wood or steel joists with wood or steel deck.	Almost any material except bearing or curtain walls of solid masonry or concrete. Generally combustible construction.
S	Metal bents, columns, girders, purlins and girts without fireproofing, incombustible construction.	Wood or steel deck on steel floor joists, or concrete slab on grade.	Steel or wood deck on steel joists.	Metal skin or sandwich panels. Generally incombustible.

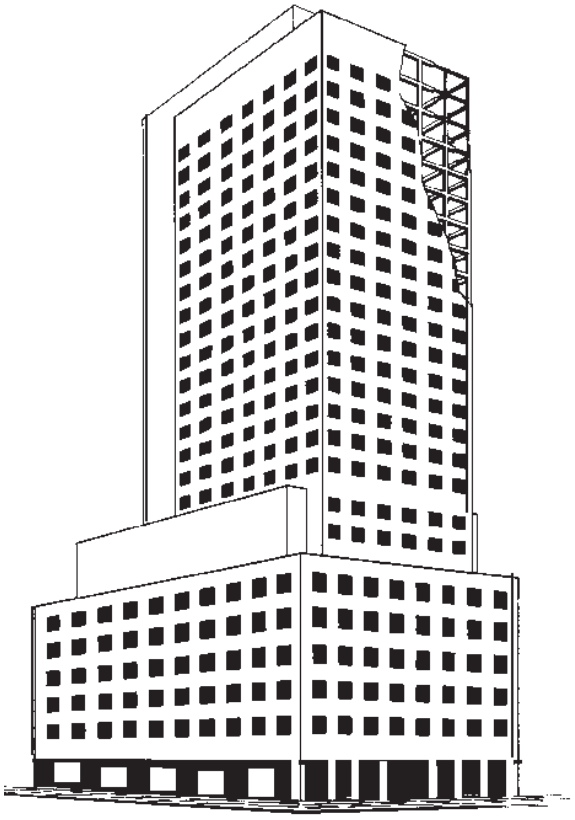
CLASS A BUILDINGS

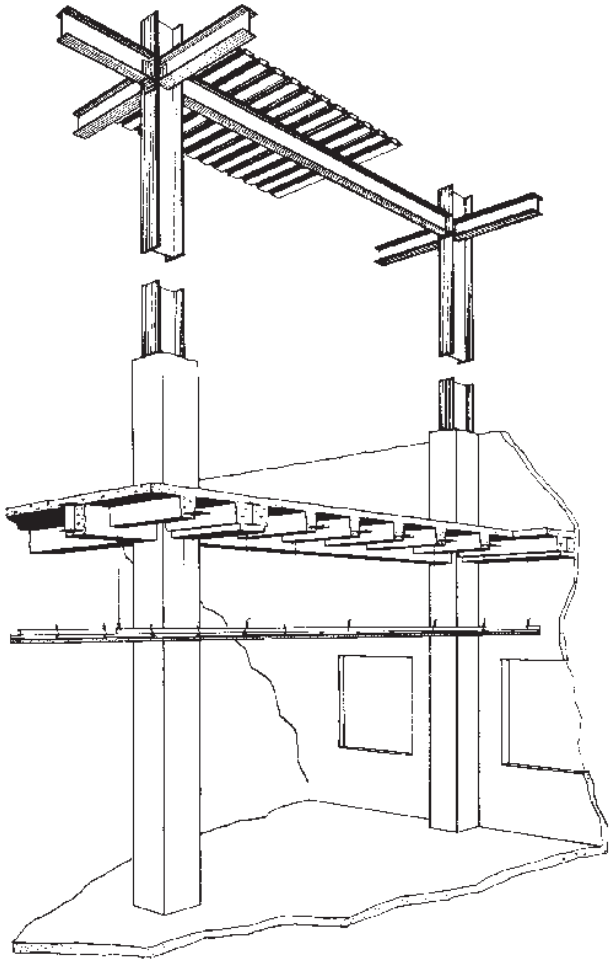
The primary feature of Class A buildings is the fireproofed, protected structural steel frame, which may be welded, bolted, or riveted together. The fireproofing may be masonry, poured concrete, plaster, sprayed fiber, or any other type which will give a high fire-resistance rating.

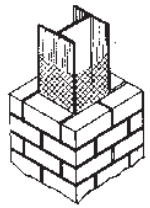
Floors and roofs in Class A structures are normally reinforced concrete on steel decking or formed slabs resting on the frame or poured so as to become integral with it. They may also be composed of prefabricated panels and may be mechanically stressed.

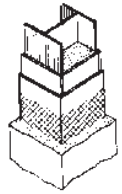
Exterior walls will be curtain walls of masonry, concrete, steel studs and masonry, tile or stucco, or one of the many types of panels of metal, glass, concrete, and other materials. Interior partitions. will frequently be of masonry or gypsum block although many movable and lightweight partitions are used.

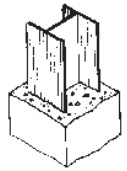
Included in this classification are Uniform, Basic and Standard Building Code construction, Types I and II (noncombustible) and ISO Classes 5 and 6 if the framing is protected steel. ISO Class 5 and 6 buildings with load-bearing walls and no interior framing and most low-rise buildings should be classified as Class C for pricing purposes. This class is also referred to as Modified Fire Resistive or Two – Four-hour construction.









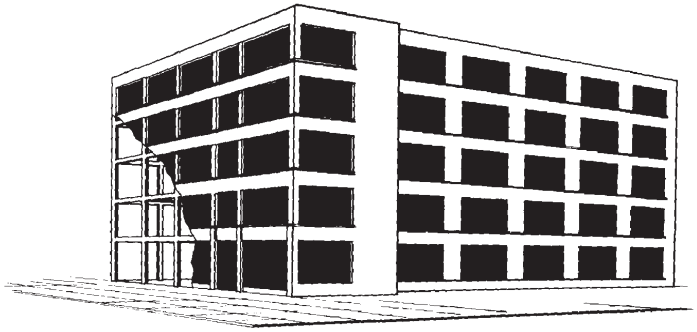


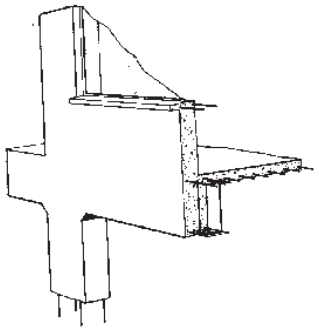
CLASS B BUILDING

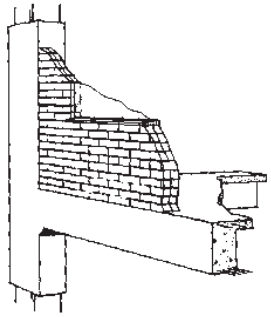
The primary characteristic of a Class B building is the reinforced concrete frame in which the columns and beams can be either formed or precast concrete. They may be mechanically stressed. It is a fire-resistant structure.

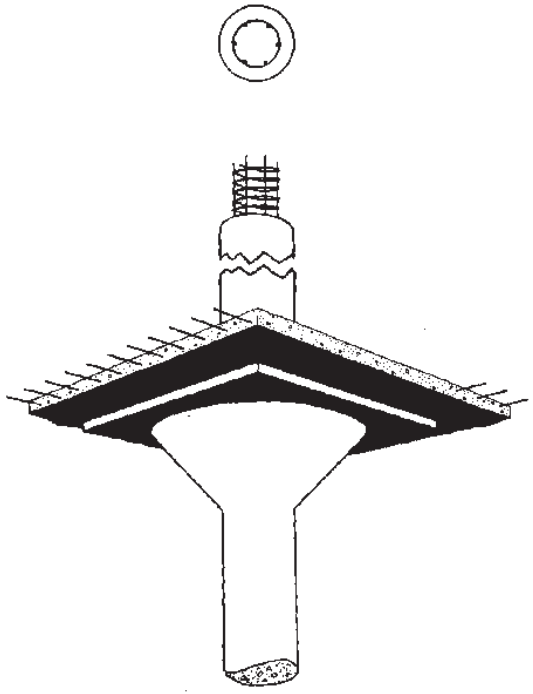
Floors and roofs in Class B structures are formed or precast concrete slabs. The exterior walls will generally be masonry or reinforced concrete curtain walls or any of the many types of wall panels of concrete, metal, glass, or stone, etc. In some Class B buildings, the walls may be partially load-bearing. Interior partitions are often masonry, reinforced concrete or gypsum block, but many lightweight and movable partitions are used where structural walls are not needed.

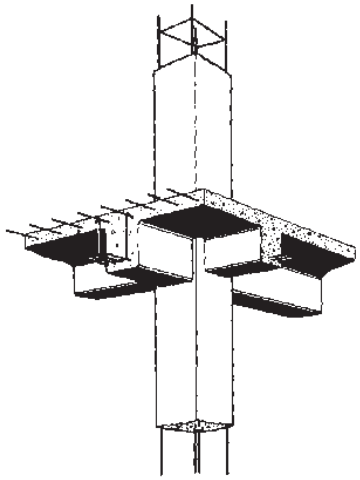
Included in this classification are Uniform, Basic and Standard Building Code Types I and II (noncombustible) and ISO Classes 5 and 6 if the framing is concrete. ISO Class 5 and 6 buildings with load-bearing walls and no interior framing and most low-rise buildings should be classified as Class C for pricing purposes. This class is also referred to as Fire Resistive or Two – Four-hour construction.



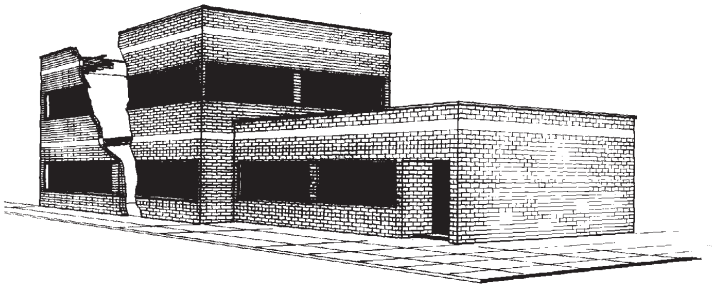




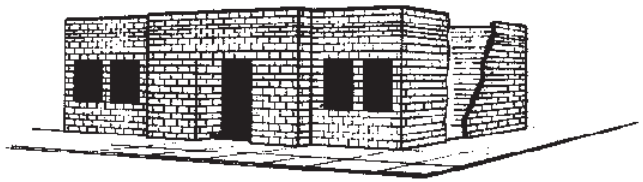


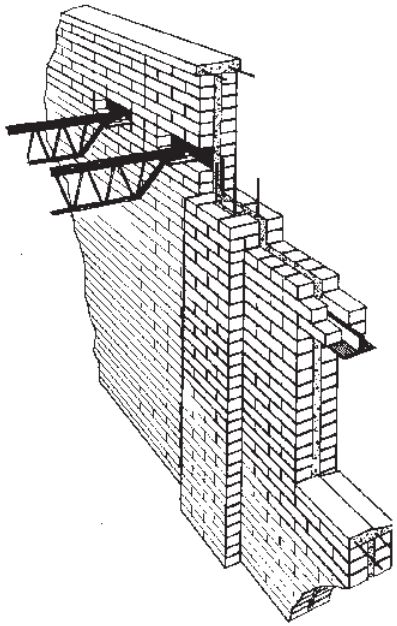


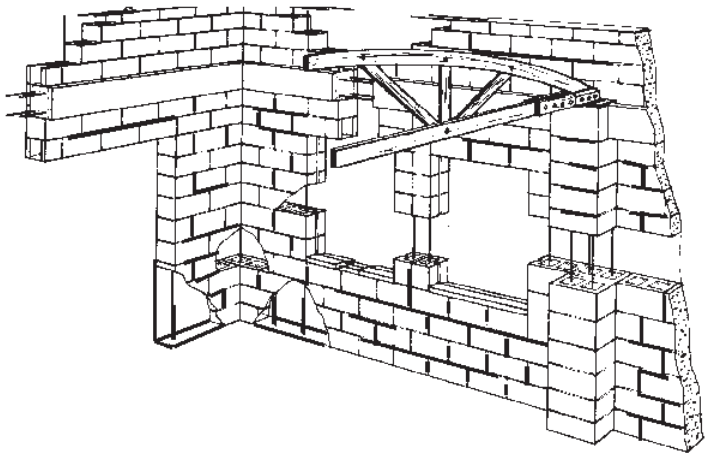
CLASS C BUILDINGS

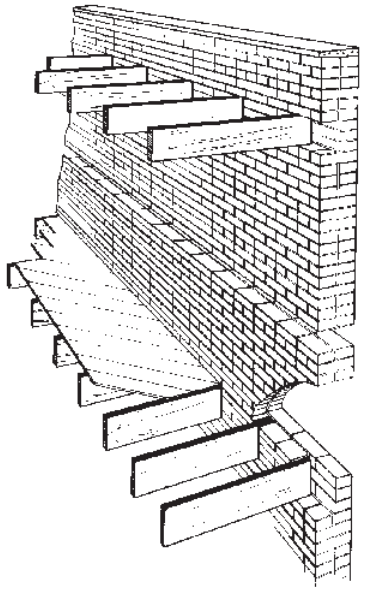


Class C buildings are characterized by masonry or reinforced concrete (including tilt-up) construction. The walls may be load-bearing, i.e., supporting roof and upper floor loads, or non-bearing with open concrete, steel, or wood columns, bents or arches supporting the load. Floors and roofs are supported on wood or steel bar or web joists or trusses, or the floor may be a concrete slab on the ground. Upper floors or roofs may be of concrete plank, steel deck, or wood. Bearing walls are frequently strengthened by concrete bond beams and pilasters. Included in this classification are Uniform and Basic Building Code Type III (noncombustible wall), Standard Code Type V and ISO Classes 2 and 4, and those Class 5 and 6 buildings which have load-bearing walls without interior framing and of low-rise (3 stories or less) design. This class is also referred to as Masonry or Unprotected Noncombustible, Joisted or Unprotected Masonry, or Ordinary or Unprotected One-hour and to include certain Two-hour or Mill construction (heavy timber).









CLASS D BUILDINGS

Class D buildings are characterized by combustible construction. The exterior walls may be made up of closely spaced wood or steel studs, as in the case of a typical frame house, with an exterior covering of wood siding, shingles, stucco, brick or stone veneer, or other materials.

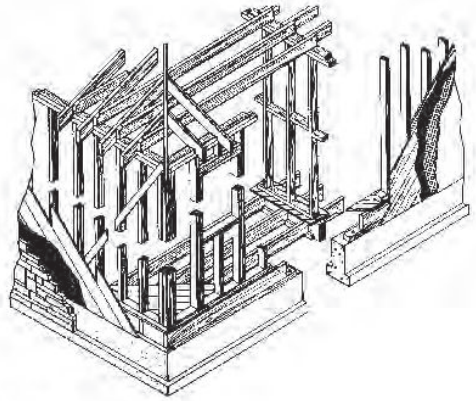
Floors and roofs are supported on wood or steel joists or trusses or the floor may be a concrete slab on the ground. Upper floors or roofs may consist of wood or metal deck, prefabricated panels or sheathing.

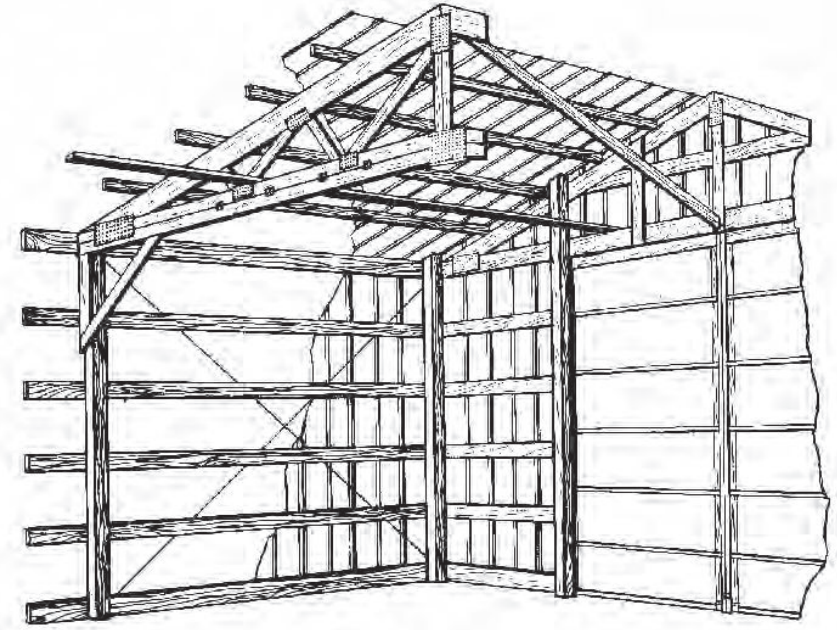
Class D pole (a subset of Class D) buildings are characterized by combustible prefabricated wood structural members. The exterior walls comprise an open-wood skeleton post frame and trusses, with exterior coverings of prefabricated metal panels or sheet siding. Wall girts span between posts, and there can be an in-fill of wood studs. Upper floors are supported on wood joists or trusses. The roof is supported by prefabricated trussed rafters with wood purlins or nailers. Ground floors are typically concrete slabs or dirt.

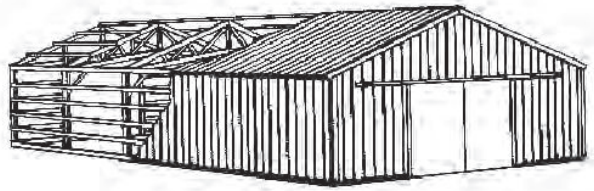
Class D hoop arch (another subset of Class D) buildings are characterized by combustible, prefabricated, wood-post and tubular-steel, semicircular (hoop - quonset shape), framed roofs that curve to a short wooden pony wall or to the ground. The roof and walls are generally covered with canvas or a woven vinyl tarp. Ground floors are typically dirt or can be a concrete slab.

Construction Type V (wood-frame) of the Uniform, Type IV Basic and Type VI Standard Building Code are included in this classification as are ISO Class 1 buildings. This class is also referred to as Unprotected-protected One-hour Construction.

Class D is further used to include all buildings that do not fit into any other classification, however special buildings such as service stations, greenhouses, etc. will be found in the supplemental Unit-in-Place building cost sections of the manual.





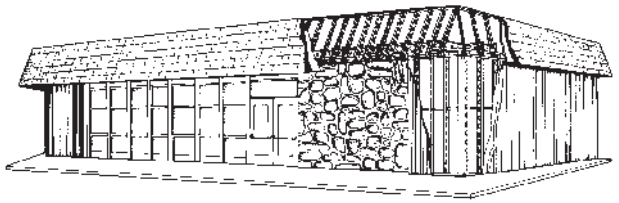


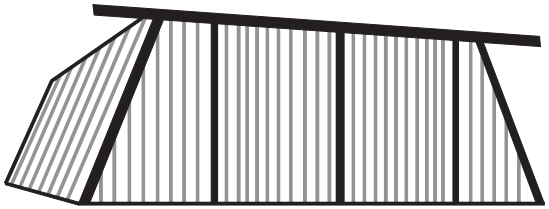
CLASS S BUILDINGS

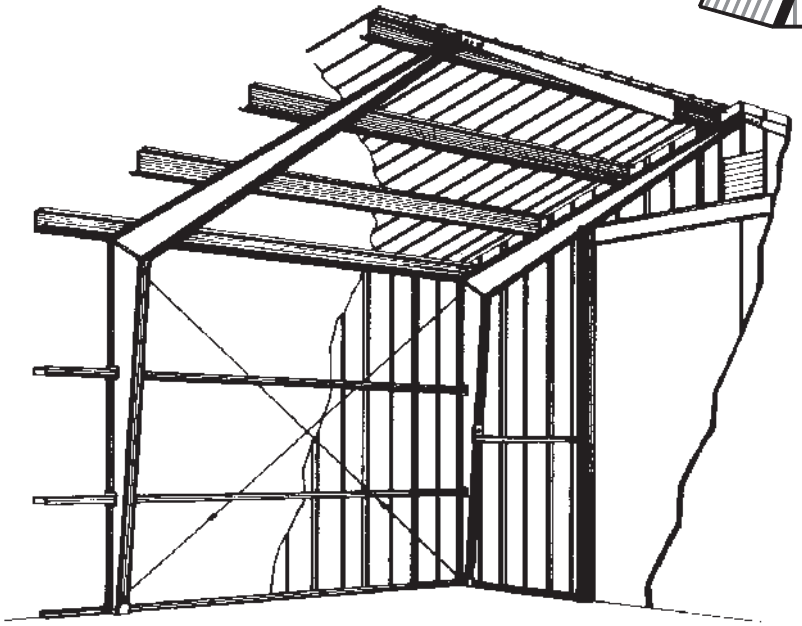
Class S buildings are characterized by incombustible construction and prefabricated structural members. The exterior walls may be steel studs or an open-steel-skeleton frame with exterior single or sandwich wall coverings consisting of prefabricated panels or sheet siding. Floors and roofs are supported on steel joists or beams, or the floor may be concrete slab on grade. Upper floors or roofs may consist of metal deck, prefabricated panels or sheathing.

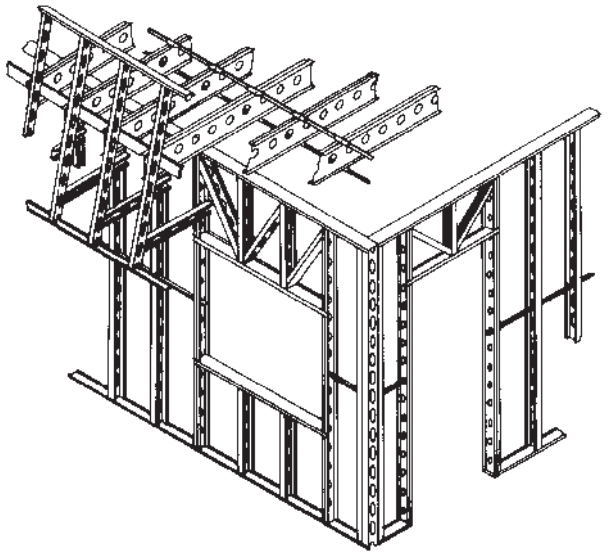
Class S slant-wall buildings (a subset of Class S) are characterized by incombustible construction and light, prefabricated structural members. They are not fire-resistant buildings. The exterior walls and roof coverings are prefabricated metal panels or sheet siding supported by an open-steel skelteon slant (modified A) frame. Ground floors are typically concrete slabs.

Included in this classification are Uniform and Standard Building Code construction, Type IV (noncombustible), Basic Code Type V and ISO Class 3 buildings. This class is also referred to as Noncombustible and can be One-hour Type II construction.









QUALITIES OF CONSTRUCTION

All of the costs in the Calculator and Segregated Cost Sections are subdivided by quality for pricing purposes. It would be impossible, short of a detailed specification, to describe exactly what is meant by each quality, so proper selection is dependent upon the experience and judgment of the user.

The quality scales against which most buildings and their parts must be rated are:

LOW COST AVERAGE GOOD EXCELLENT

Additional classifications have been added where warranted.

For the purpose of the Manual, the Average building is representative of the majority of buildings of its occupancy and the cost is the statistically averaged cost of all buildings of its class and occupancy nationally. This must be considered by the valuator since it is very easy for an estimator working mainly on low-cost structures to tend to overclassify, and for the estimator who is chiefly working on better properties to underclassify because their ideas of an average building are different. Usually, in cities with strong building codes, the Average building is the standard code building with some extra trim and refinements while in an area with less exacting code provisions, the Average building could be the best building in the community depending on the occupancy. Also, certain occupancies in some areas may have stringent code requirements, funding agency constraints and/or high land values, etc., which can drive the overall costs up, so that the local standard building for pricing purposes is rated “Good”.

Quality of construction is often more difficult to determine in buildings where the importance of appearance and amenities is equal to or greater than the importance of pure utility. Dwellings often present a greater problem than do commercial or industrial buildings, which are usually designed primarily for utility and strength. Moreover, dwellings represent the most numerous single type of buildings. As an aid to quality classifications, descriptions of some components of typical buildings in various occupancies, styles, and qualities are given as a guide in the Calculator Sections, as well as pictures with explanations. Section 40 contains explanations of the Segregated Cost ratings. Following are brief, general descriptions of the four basic quality levels:

LOW QUALITY

Buildings in this category are generally constructed to minimum code requirements often with little regard for architectural appearance or other amenities. They are built with minimum investment in mind. Little ornamentation is used and interior partitioning and finish is minimal and/or of low quality.

In cities with strong building codes, few low-cost buildings of certain occupancy types are built because of code requirements and the fact that it often is not economical on high-priced land. In some rural communities, the Low Quality category may contain some of the more important buildings in town. The figures in the Calculator Costs are for the center of a range of costs of buildings in the same general category, and are not for the lowest-cost buildings which could be built.

In general, Low-cost dwellings are houses built to conform to a minimum building code. Substandard single-family residences which were built without any building code control are given a special classification of Cheap quality. Cheap may also be used to describe a basic shell structure which is deficient in interior finishes typical of a particular occupancy.

AVERAGE QUALITY

Average-quality buildings constitute the largest group of buildings constructed, approximately fifty percent of all buildings. These are generally buildings designed for maximum economic potential without some of the pride of ownership or prestige amenities of higher-quality construction. They are of good standard code construction with simple ornamentation and finishes.

The basic costs, which are listed, are national averages and in the case of any particular locality, may not represent the local average quality.

In dwellings, the typical Average-quality dwelling changes through the years, with today’s dwelling generally having more electric outlets and services and more plumbing fixtures. At the same time, the quality of exterior and interior finishes has been lowered to compensate for the total cost of the house.

An Average, conventional frame dwelling should have joists and wall framing that will conform to all federal, state, and local building codes. Wall construction varies in different localities and modular homes may deviate in many respects. The Average Class D dwelling of the warmer portions of the United States may not have extensive sheathing or insulation between the studs and the exterior wall finish, while this would definitely be considered substandard in a colder climate. However, the warmer climate residence will generally have more fenestration.

The Fair quality is the mid-range of the so-called “starter house”.

GOOD QUALITY

Buildings designed for good appearance, comfort and convenience, as well as an element of prestige, constitute the Good Quality category. Ornamental treatment is usually of higher quality and interiors are designed for upper-class rentals. The amenities of better lighting and mechanical work are primary items in their costs.

In dwellings, the good residence is generally built to cater to the young executive or move-up market. It will be much the same construction as the Average, with more detail and higher mechanical and electrical costs and may be the standard structure in the so-called move-up community.

EXCELLENT QUALITY

Excellent buildings are normally prestige buildings. On an economic basis, part of the cost must be written off to pride of ownership and some of the income intangibly derived from advertising. Excellent dwellings are generally built for the established professional or those with higher incomes and will have some expensive finishes and fixtures.

The High Value quality dwelling will normally have more ornamentation, special design, and top quality materials. However, the costs listed will not be high enough for the most luxurious types of dwellings, built without regard for cost, since each listed cost represents the center of the costs within that quality range.

SUMMARY

Buildings must be compared for quality within the occupancy listed. Industrial buildings must be compared with other industrial buildings. Lofts cannot be compared with offices, and all types must be considered in the light of what is built nationally. Many localities will never have an Excellent quality building. In some localities it will be difficult to build a Low-cost building for some occupancies because of code requirements and land costs.

It is usually true that a well-framed building is a well-finished building. If the builder cuts corners on his framing, he will probably also cut corners on his finish and mechanical equipment. Cheap hardware, lighting fixtures, and millwork may be very ornamental, while, for example, the structure of a model home may be scarcely strong enough to support its beautiful tile roof; therefore, the estimator must have some idea of comparative quality of components and the occupancy as a whole.

DETERMINING QUALITY

First, to judge quality, it is suggested that the cheapness or expensiveness of materials or components be observed. Comparative cost variations may be influenced by thickness, materials used, method of application or attachment, the type of ornamentation, the intricacy of the design, and the color or finish observed.

Second, see if workmanship is at a level normal to the type and grade of material used. If the materials and other features generally fit a specific quality level, it usually follows that quality of workmanship will be equivalent. One or two components of a different quality is normal and should be largely disregarded as influencing the overall classification for general quality.

Third, and most important, the user should consider the amount of the various components typical for its class. For example, a building may give evidence of only average workmanship and materials. The fixtures and trim may not be of the best quality. It may, however, have more than the average number of windows and doors, and there may be more than the average number of plumbing fixtures. The exterior may have a great deal of rather average masonry or wood ornamentation or asphalt cover on a hip roof with large overhangs. Even though these items are not of the best quality, the extra quantity causes the building to have above average cost, and for pricing purposes, it may be rated as “Good”. Or the building may contain quite expensive lobby and entry finishes, but with many average upper floors, where the building size alone is making a statement and overall the building cost may be rated “Good”.

Another similar building may be fairly plain in appearance and without a great deal of ornamentation, but still give evidence of excellent workmanship. The hardware, lighting fixtures and interior and exterior trim, while not fancy, may be of very good quality. Such a building probably would be priced as “Good” although materials and workmanship may be excellent but of limited amount.

Lastly, the overall size as well as the complexity of the structure should be considered. That is, small structures will tend to have higher unit costs than very large ones. This is particularly true with large open-shell structures where a 300,000 square foot warehouse may not be valued at the same cost level as a 30,000 square foot warehouse.

When using the Segregated Cost Method, in addition to the aforementioned, the same type of consideration must be given to each of the component parts. An “Average” brick wall may be 12" thick with an average number of openings and plaster interior, or it may be less thick, but have better-than-average or larger-than-average windows. If the valuator feels that the appraisal warrants the additional time, the exterior wall cost may be built up from the Unit-in-Place costs in Section 55.

A forced-air heating system may have a competitive brand of heating unit and only average-quality workmanship in the ductwork. However, it may be in a cold climate which requires a larger capacity unit or extra perimeter heat, or there may be a large number of outlets or zoned areas, or overhead vs. floor registers, thus increasing the cost of the ductwork so it might be classified as “Good”.

If it is felt that the quality is somewhere in between the qualities designated by the column headings, it would be appropriate to use a cost in between. It must also be remembered that ‘‘Low’’ quality doesn’t mean the lowest-cost building that can be found, nor does ‘‘Excellent’’ mean the most expensive building possible. These classifications are merely the median averages of many buildings fitting the same general category.

The relative quality of a building which has stood for some time usually can be fairly well gauged by its appearance. Cracks open in a substandard, Low Cost or even in the Average building. The hardware and fixtures show definite signs of wear, doors and windows stick, fixtures become loose and tarnished, floors creak underfoot. The Good or Excellent building, although old, will retain its soundness and substantial appearance. Joined woodwork will stay together and fixtures will retain much of their original luster and stability.

SELECTION OF METHOD

METHOD AVAILABLE – The Marshall Valuation Service offers the user the choice of three methods of computing present replacement cost of buildings: the Calculator Method, the Segregated Cost Method and the Comparative Cost Indexes and Multipliers. In addition there are many Unit-in-Place costs, with which the user may build up or adjust costs or price miscellaneous construction items and rule of thumb costs for quick indicators of value.

1. **The Calculator Method**, Sections 10 through 18. These sections contain average square and cubic foot and square meter costs for various classes, occupancy types, and qualities of buildings together with modifiers for common deviations from the descriptions of the typical buildings listed. Instructions for the use of the Calculator Method and step-by-step examples are given in Section 10, while modifiers to use with the method are found in each occupancy section. The listed costs are averages including architects’ and engineers’ fees, contractors’ profit and overhead, permits, and miscellaneous costs, as listed on page 3 of this section.

   a. Select the basic cost from the Calculator cost pages.

   b. Make refinements to the basic cost from the last pages of each section.

   c. Multiply the refined square foot cost by:

   Current Cost Multiplier (99-3) and Local Multiplier (99-5 to -10).

   Refined Cost x Current Cost Multiplier x Local Multiplier = Final Cost

2. **The Segregated Cost Method**, Sections 40 through 48. These sections give the cost per square foot of the major building components (foundation, frame, floor, walls, etc.). Instructions for the use of the Segregated Cost Method are contained in Section 40 and Unit-in-Place costs are given in Sections 51 through 58 for adjusting or building up component costs and for pricing miscellaneous items. Additional supplemental costs are included in Sections 61 through 67. These costs of component items include labor, material, and a pro rata share of the additional costs of construction, except for architects’ fees which are generally excluded, except where noted. If it is desired to include an architect’s fee, schedules of typical fees are listed in Section 99.

   a. Develop Segregated Cost from individual component costs.

   b. Make refinements to the costs from the refinement notes.

   c. Multiply the developed Segregated Cost by:

   Architects’, Current Cost and Local Multipliers.

   Developed Cost x Architects’ x Current Cost x Local Multipliers = Final Cost

3. **Comparative Cost Indexes and Multipliers**, Section 98. These tables give indexes and multipliers by which known historical costs may be converted directly to present-day costs or current costs may be taken back in time.

   a. Select factor opposite the month and year of the original cost and under the proper class of building (98-5 and -6).

   b. Multiply the factor by the monthly Comparative Cost Multiplier correcting factor (99-4).

   c. Multiply this combined multiplier by the original replacement cost.

Comparative Cost Multiplier x Correcting Factor x Original Replacement Cost = New Cost

QUALITY OF CONSTRUCTION INDICATORS

The following schedule may assist you in determining whether a building should be classified minimal (cheap), low cost, average, good or excellent.

If you have difficulty in assigning the proper type to a building, check off the specifications or characteristics against the schedule below. The type will be indicated by the column heading containing a majority of the building's characteristics. Or, if the relevant characteristics are split evenly between two columns, "Low Cost" and "Average" for instance, interpolate between the costs given for "Low Cost" and those for "Average". It is important to remember that the overall size of the structure and/or the benchmarked standard for the area can have a major bearing on the cost rank chosen for pricing purposes. Please refer to Pages 10 and 11 for further discussion.

The specifications listed are not, of course, absolutely definite, but may be taken as generally indicative of the quality found under the various types of buildings. The table, to be used effectively, must be benchmarked against representative buildings whose costs are known.

Unusual buildings with the best in ornamental materials, hand-built artistry and meticulous attention to detail are not in the province of this book, and their costs may not be found here.

Category	Minimal Construction	Low-cost Construction	Average-quality Construction	Good-quality Construction	Excellent-quality Construction
General Description	A structure deficient in finishes typical for its use, or below standard building codes. Usually built as a shell or outside cities or before standard building codes were established. Especially typical are summer cottages and farm sheds.	The same as "Average", but with no extras. Built at the lowest practical cost to still pass building codes. Very plain but substantial buildings. Typically speculative construction or from stock plans and off-the-shelf components. May be considered standard in low-cost areas.	The most common, frequently owner- or contractor-designed. Workmanship is professional, but extras in craftsmanship not in evidence. Materials are serviceable, but built for a price. These buildings are basically little above minimum uniform building code requirements.	Above average, but not uncommon in quality of materials and workmanship. Architects and reputable contractors are retained for this work. May be considered only standard construction in high-cost areas.	Custom-built buildings, embodying superior materials and workmanship, the best normally found, though not including special construction with unusual material and labor. Well-known architects and contractors are retained for this work.
Outside Walls	Light single wall, rough masonry, boards, etc. No ornamentation. Few uncased openings.	Substantial, but for utility only. No ornamentation. Plain casings. Generally minimum fenestration.	Up to local building requirements. Standard thickness of masonry or stucco or good grade-lumber. Minimum ornamentation on front.	A refined average, careful workmanship. Well ornamented front, Fully braced. Best basic construction.	Basic construction. Same as "Good", but more or better ornamentation, terra cotta, face brick, cast stone, tile. Carefully finished and inspected. No evidence of rough or "cover-up" finish.
Frame	Light pre-engineered frame. Studding or posts widely spaced. Minimum bracing, standard-grade lumber only.	Open wood or unprotected steel only. Light framing fairly well braced.	All types of frames. Subject to building inspection, but "quantity production" or speculative type.	Well framed, with engineering design.	Framed as in "Good" quality.
Floors	Rough concrete or light sheathing with widely spaced joists. Low-cost asphalt or vinyl composition tile.	Unfinished concrete, light sheathing, minimum-grade carpet, vinyl composition tile.	Plain concrete, standard carpet, vinyl composition sheet or tile, soft T&G or straight-laid hardwood.	Good-quality hardwood or terrazzo. Above-average carpet and resilient flooring.	As "Good", but halls and larger areas all ornamented. Inlaid parquet, marble or granite.
Ceilings	Unfinished or plain wall board.	Plain drywall, boards or low-cost dropped ceilings. Paint only.	Textured drywall or skim-coat plaster, standard acoustical panels.	Metal lath, coved, some staff ornamentation or beaming.	Best plaster, paneled or well-beamed in principal rooms.
Interior	Usually unfinished or few rough partitions. Uncased openings.	Plain wallboard, block partitions, painted surfaces only, plain cased openings.	Entirely drywalled or skim-coat plastered, ordinary trim, softwood doors.	Good drywall, wood, metal lath or tile partitions, softwood doors and trim.	As "Good", but hardwood trim and doors. Best papers, matched stones and woods.
Built-in Fixtures	Usually none.	Little shelving, plain cabinets.	As found in average "production" structures.	Many or substantial fixtures in softwood.	Hardwood principal fixtures and all conveniences.
Plumbing	None or very limited service.	Minimum or plain fixtures.	Adequate fixtures. Ordinary quality.	As "Average", but better quality. Situated for convenience	Colored or luxury plumbing fixtures. Above-average amount.
Lighting	Open wiring, few outlets or no fixtures.	Usual outlets, plain or industrial fixtures.	Conduit or nonmetallic sheathed wiring, inexpensive fixtures. Adequate outlets.	Many or better-type fixtures in principal rooms.	Well designed fixtures throughout.
Roofing	Light trusses, wide spacing, shed or low gable, light-gauge corrugated metal, rolled composition.	Same as "Average", but with no extras. Low slopes with simple gables.	Engineered trusses, some hip or mansard, light composition shingles, built-up, standard gutters.	Good trusses, heavy composition shingles or built-up, elastomeric, formed metal or concrete tile. Finished soffits.	Complex roofs, best tiles, slate, elastomeric, copper or terne, skylights.

OCCUPANCY FLOW CHART

The following table may assist you in determining a quick relationship in overall cost levels between related occupancy groups. Not all occupancies are listed. There will be a certain amount of overlap between classes and cost ranges in certain occupancies. These order-of-magnitude lists are only a rough guide at best and are presented as a teaching aid only. For a specific occupancy reference, see Section 2, Table of Contents. Complete occupancy descriptions can be found on the first page of each Calculator section.

CATEGORY	Outbuildings Mostly Unfinished → Some Finished Floors, Interior Buildout, Low-cost Mechanicals → Greater Partition Density, Better Lighting & Plumbing, Increased Personnel Density → Fully Finished Buildout, Upgraded Mechanicals → High-cost Buildout, Best finishes, High Partition Density, Best Mechanicals
FARM	Shelters - Sheds - Poultry - Barns - Hog - Dairy - Stables
INDUSTRIAL	Farm Implement - Lt. Comm'l. Equipment Shops - Garages - Hangers - Maintenance Repair Garages - Municipal Garages - Showrooms Farm Utility - Light Comm'l. Utility/Commodity Bldgs. - Warehouses - Distribution - Industrials - Flex Buildings - Lofts - Research & Engineering - Laboratories
COMMERCIAL	Shed Offices - Relocatable Offices - Office Apartments - Office Buildings - Administrative Offices - Banks
MEDICAL	Veterinary Hospitals - Dispensaries - Medical Offices - Clinics - Hospitals - Surgery Centers
PUBLIC	Volunteer Fire Stations - Staffed Stations - Community Centers - Police Stations - Libraries - Community Service - Governmental - Jails
RETAIL	Warehouse Stores - Warehouse Showrooms - Discount Stores - Retail Stores - Department Stores - Anchor/Big Box - Boutiques Neighborhood - Community - Discount - Regional Shopping Centers Roadside Stand - Food Warehouse Stores - Markets - Convenience Drug Stores - Specialty Minimarts - Winery Shops
FOOD SERVICE	Snack Bars - Banquet Halls - Cafeterias - Bars - Lounges - Truckstops - Restaurants, Table Service - Diners - Fast Food
ASSEMBLY	Farm Arenas - Armories - Cinemas- Auditoriums - Churches - Live-stage Theaters Clubhouses - Country Clubs - Fraternal - Visitors'/Senior Centers - Convention Centers - Museums
RECREATIONAL	Tennis Clubs - Arcades - Health Clubs - Raquetball/Handball - Bowling - Fitness/Community Centers - Casinos
EDUCATIONAL	Field Houses - Shower Buildings - Restrooms - Gymnasiums - Physical Education - Natatoriums - Multipurpose - Commons Manual Arts - Relocatable - General Classrooms - Lecture - Labs - Science - Theater Fine Arts Day Care - Technical Trade Schools - Middle - High - Elementary Schools - Colleges
RESIDENTIAL	Farm Labor Dorms - Rooming Houses - Fraternity Houses - Rectories Guest Cottages - Motels - Inns - Lodges - City Clubs - Hotels Multiple Residences - Dormitories - High-rise Apartments - Luxury Apartments Senior Multiples - Assisted Living - Elderly Apartments - Group Care Homes - Convalescent Hospitals Seasonal Cottages - Cabins - Townhouses - Single Family - High-value Residences