

# GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

## SECTION SEG 4 (SEGREGATED COST METHOD)

Garages, industrial buildings, lofts, and warehouses are characterized by utilitarian construction; however, many light industrial buildings now approach office buildings in interior construction and space division. In this respect, many electronics and similar industrial plants have many loft or office building characteristics. If the plumbing and interiors of these buildings are not priced in detail, great care should be exercised in using the typical cost ranges shown. The interior and plumbing costs included in the tables of costs per square foot of floor area include typical office and showroom space necessary for the manufacturing or storage operation. They do not include office and showroom space for other functions of the entire business even though they may be attached to the structure. Many buildings of the types covered by this section are designed to support heavy loads. Their foundations, frames, floors, and walls are heavier than most other occupancies, while fenestration is simpler. Sheds, including low-cost utilitarian storage structures, which are usually lighter than typical industrial or warehouse buildings, should be priced from Section UIP 14.

Cold-storage facilities can be priced by building up the basic structure cost from this section and adding costs for specific insulation and refrigeration from Section UIP 8.

Foundations for Classes A and B industrial buildings can be priced quite accurately on a square foot of floor area basis. However, with Classes C, D and S light industrial shell-type buildings, a perimeter foundation or footings may carry most or all of the load and the cost is generally proportional to the perimeter. Such costs may be better computed on the linear foot of bearing wall basis with costs of column

footings added if there are interior columns supporting a roof or floor load above.

Frame costs should be adjusted for partial bearing walls, as described in Section UIP 1, using a cost proportional to the load which is carried by the frame. If the frame members are visible and uniform enough to be easily measured and counted, they may be priced from Section UIP 1. When a complete frame cost is used, generally the trusses or girders would be included as the horizontal members of the frame. See explanations in Section UIP 1 or SEG INTRO. In single-story buildings where the frame supports only a light roof, Rating 1 might often be chosen, even in average buildings. Interior construction varies widely in industrial structures. The costs given are only typical ranges and should be used with caution. If desirable, partition costs may also be built up from Section UIP 2; however, interior costs also include miscellaneous cabinets, shelves, stairs, and other items.

Plumbing will vary widely and may be more accurately priced on a per fixture basis; however, typical cost ranges are given on a square foot basis. Industrial sinks and other specialized fixtures may also be found in Section UIP 3. Plumbing costs do not include process piping for industrial equipment.

Electrical costs do not include power wiring or panels for industrial equipment.

Exterior walls may contain few or no windows, or they may be nearly an all-glass area. Thus, the exterior wall costs have a wide variation, depending on the amount and quality of fenestration.

### SEGREGATED COSTS

*(For explanation of the rating numbers which head the columns, see Introduction to SEG Method.)*

#### EXCAVATION AND SITE PREPARATION

	1	2	3	4
Excavation, bulk (per cu. ft.) . .	\$.21	\$.29	\$.40	\$.54
Fill (per cu. ft. of compacted earth)	.22	.29	.36	.47
Site preparation (per sq. ft. of site)	.18	.23	.30	.40

**FOUNDATION – Table I gives complete average costs per square foot of floor area. If a more detailed estimate is desired for Class C, D or S buildings with continuous or column footing foundations, use Tables II and/or III as appropriate.**

**TABLE I. CONCRETE FOUNDATIONS – Apply to total floor area including basements, but excluding mezzanines.**

Concrete foundations for:				
Class A . . . . .	\$2.15	\$2.90	\$3.92	\$5.29
Class B . . . . .	2.30	3.05	4.04	5.36
Class C, bearing wall . . . . .	2.04	2.75	3.71	5.00
nonbearing wall . . . . .	1.95	2.62	3.53	4.76
Class D, masonry veneer . . . . .	1.86	2.52	3.41	4.61
siding or stucco . . . . .	1.63	2.20	2.98	4.03
pole-frame construction . . . . .	1.52	2.04	2.75	3.70
Class S . . . . .	1.61	2.20	3.01	4.12
Classes C, D and S, light				
perimeter foundation for open				
shell-type structures . . . . .	.65	.87	1.16	1.55
Add for perimeter insulation,				
ground floor area only . . . . .	.06	.10	.18	.28
earth-sheltered structures . . . . .	.09	.15	.24	.39

#### FOUNDATION (Continued) – ALTERNATE METHOD

**TABLE II. CONCRETE FOUNDATIONS – Apply to linear feet of continuous footings or foundation walls if Table I is not used. See foundation discussion above.**

	1	2	3	4
Heavy grade beam/stem footing				
Class C . . . . .	\$28.50	\$40.00	\$56.00	\$78.50
Class D, masonry veneer . . . . .	25.75	36.50	51.75	73.25
siding or stucco . . . . .	22.75	32.25	45.50	64.25
Class S . . . . .	22.75	32.50	46.25	66.00
Classes C, D and S, reinforced				
light-grade beam . . . . .	17.75	25.50	36.50	52.25
unreinforced-grade beam . . . . .	9.00	13.25	19.50	28.75
Add for perimeter insulation . . . . .	1.50	2.65	4.40	6.95
earth-sheltered structures . . . . .	2.15	3.90	6.55	10.10
Add for perim. radon-control mat. . . . .	2.10	2.35	2.80	3.30
Add for perim. raised-floor skirt . . . . .	5.85	6.90	8.00	9.25

**TABLE III. CONCRETE COLUMN FOOTINGS – Apply to total number of columns if Table I is not used. Costs apply to one-story buildings. For others, add 20% for each story over one.**

Concrete columns . . . . .	\$69.00	\$114.75	\$183.00	\$287.50
Steel columns . . . . .	63.25	106.50	171.50	270.00
light pre-engineered frame . . . . .	38.50	51.25	68.25	91.00
light tubular/pipe frame . . . . .	30.25	43.25	62.00	88.75
Wood columns . . . . .	52.75	84.00	130.00	199.50
light pole-frame . . . . .	31.50	44.50	63.00	89.00

#### FOUNDATION ADJUSTMENTS – Apply to base cost used.

Add 2% for each foot of average story height over 14' base. Deduct 2% for each foot of average story height under 14' base. Deduct .8% for each story over one, for multistory buildings. For one story buildings with light perimeter grade beam foundations or foundations and footings formed and poured monolithically with floor slabs, use 60% of the above costs for that floor only. Add for pilings from Section UIP 1. If foundations are brick or stone instead of concrete, increase costs by 20%. For concrete block, reduce costs by 8%.

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**FRAME – Apply to total floor area including basements, but excluding mezzanines.**

	1	2	3	4
Bearing walls, wood or steel floor				
Bearing walls, wood or steel floor supports only	\$1.02	\$ 1.23	\$ 1.49	\$ 1.78
masonry supports only	1.46	1.76	2.12	2.55
Steel, fireproofed, Class A	9.54	11.22	13.20	15.52
Composite concrete-steel, Class B	9.20	10.62	12.27	14.16
Concrete, reinforced, Class B	8.93	10.44	12.19	14.25
precast, post-tensioned	8.61	9.94	11.47	13.24
Steel, Classes C and D	3.71	4.79	6.17	7.95
Class S	3.43	4.44	5.74	7.43
light pre-engineered frame	2.21	2.84	3.64	4.68
light tubular/pipe frame	1.32	1.79	2.44	3.31
add for fireproofing	.58	.94	1.45	2.24
Steel columns, wood beams	2.30	3.12	4.25	5.76
Wood, A-frame construction	2.92	3.67	4.63	5.83
laminated bents and arches	3.32	4.16	5.21	6.53
light arch-rib construction	2.12	2.70	3.42	4.35
mill-type (heavy timber) const.	3.47	4.36	5.47	6.88
heavy timber/log construction, architectural	6.82	8.98	11.83	15.57
post and beam construction	2.40	3.01	3.81	4.79
light pole-type construction	1.38	1.82	2.40	3.16

**FRAME ADJUSTMENTS – Apply to base cost used.**

Add 4% for each foot of average story height over 14' base height. Subtract 4% for each foot of average story height under 14'. For multistory buildings, add 4% for each story over two, to apply against the total floor area. For craneways, use frame member costs in Section UIP 8. For partially framed structures, see Section UIP 1.

**FLOOR STRUCTURE – Apply to area of described floor or mezzanine.**

Asphalt, on ground, including base	\$ 1.50	\$ 2.06	\$ 2.84	\$3.92
Concrete, on ground (exclusive of vapor barrier)	2.41	3.06	3.87	4.91
lift slab	7.19	8.40	9.82	11.47
elevated flat slab and joists	8.15	9.55	11.19	13.11
pan or waffle slab and joists	7.46	8.70	10.15	11.85
precast joists and deck	7.10	8.27	9.65	11.24
precast joists, wood sheathing	5.53	6.45	7.50	8.73
cored plank on bearing walls	6.20	7.26	8.48	9.92
Steel joists: flat slab	8.78	10.51	12.57	15.05
corrugated deck and concrete	7.05	8.78	10.95	13.63
cellular deck and concrete	----	10.24	12.98	16.46
open metal grating	12.93	18.26	25.74	36.30
precast deck	7.69	9.09	10.75	12.71
wood sheathing	4.30	5.64	7.39	9.69
light-gauge truss joists	3.71	4.94	6.58	8.76
Wood joists and sheathing	3.64	4.85	6.46	8.60
wood joists and bridging only	2.74	3.78	5.23	7.23

For treated wood, increase costs by 10% to 20%.

**FLOOR EXTRAS – Add to floor structure costs.**

Vapor barrier	\$.46	\$.66	\$.94	\$1.33
Super flat (level) slab on grade, add	.42	.72	1.17	1.82
Each inch of slab on grade over 10", add	.32	.37	.43	.51
Each inch of sheathing over 1", (mill type) add	.84	.96	1.10	1.26
Foamed concrete surfacing, 1-1/2" – 2" add	.66	.83	1.02	1.28
Floor insulation, add	.62	.71	.82	.94
cold storage	1.02	1.30	1.65	2.09
for each inch over 2", add	.21	.31	.44	.65

**FLOOR COVER – Apply to area of described floor.**

	1	2	3	4
Access (computer) floor,				
on stanchions	\$12.50	\$14.75	\$17.50	\$21.00
full office floors	8.25	9.65	11.30	13.20
Asphalt tile	1.45	1.65	1.95	2.25
Bamboo, laminated plank	6.90	8.20	9.75	11.55
Block, wood, treated	4.40	5.25	6.15	7.25
Brick, common, in mortar	5.60	6.60	7.75	9.10
Brick, industrial, acidproof	10.20	12.75	16.00	20.10
Brick pavers, in concrete	6.60	7.80	9.30	11.00
Carpet and pad	1.50	2.30	3.60	5.45
custom carpet and pad	5.50	8.75	13.65	20.90
indoor/outdoor	1.40	1.75	2.20	2.80
Color, concrete	.70	.85	1.05	1.25
Cork	3.75	4.30	4.90	5.55
Diat, magnesite, etc.	4.80	5.55	6.50	7.55
Flagstone, random local stone, in concrete	9.10	10.60	12.45	14.60
Gratings, plastic	7.50	12.00	18.75	29.00
steel or aluminum	8.00	12.00	18.25	27.50
stainless steel	33.00	46.25	65.00	90.75
Hardener and sealer, concrete	.50	.65	.90	1.25
heavy duty	1.20	1.45	1.75	2.10
aggregate topping, 1/2" – 1"	3.30	4.35	5.65	7.45
*Hardwood	5.30	6.80	8.85	11.50
sports-gym floors on resilient sleepers	6.35	7.65	9.30	11.30
Linoleum	2.30	2.75	3.30	3.95
Marble or granite	16.00	21.75	29.50	40.00
cast tile	10.25	11.75	13.75	16.00
Melamine/laminated tile	1.80	2.40	3.25	4.40
deluxe	4.50	5.40	6.50	7.80
Plastic tile, interlocking	4.75	5.30	5.85	6.50
Rubber fabric tile	6.35	7.35	8.55	9.90
Rubber tile or sheet	2.55	3.45	4.70	6.40
Seamless plastic, epoxy, urethane, neoprene,				
1/32" – 1/16" thincoat	2.50	3.05	3.75	4.60
1/8" – 3/8"	4.05	5.00	6.20	7.65
add for colored chips or glitter	1.05	1.30	1.65	2.10
Slate, grouted	10.20	11.90	13.90	16.25
Softwood	4.25	5.05	6.05	7.20
Synthetic sports surfacing	4.85	6.00	7.35	9.10
Terrazzo (exclusive of base slab)	7.00	8.60	10.50	12.95
tile	13.50	15.50	17.50	20.25
Tile, ceramic or quarry	6.80	8.60	10.75	13.50
custom tile	16.25	19.25	23.00	27.50
*Wood over concrete, hardwood	6.15	7.85	10.00	12.75
parquet block, prefinished, in mastic	5.85	7.90	10.75	14.60
softwood	4.95	5.85	6.90	8.10
Vinyl composition tile or sheet	1.30	1.65	2.10	2.60
Vinyl sheet	2.05	2.80	3.85	5.35
Vinyl tile	2.15	3.15	4.60	6.75
*Add for custom wood floors	4.30	9.10	16.25	26.70
For pictorial artwork, add	7.00	9.75	13.75	19.25

Add 15% for conductive floor coverings.

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## SECTION SEG 4 (SEGREGATED COST METHOD)

### CEILING – Apply to area of described ceiling.

	1	2	3	4
Acoustical ceilings, tile or panels:				
metal panels, including pads and suspension system . . . . .	\$ 4.55	\$ 5.85	\$ 7.50	\$ 9.65
clean room panels, incl. suspension system . . . . .	7.50	8.55	9.65	10.75
mineral fiber, fiberglass, panels only . . . . .	.92	1.39	2.09	3.14
organic fiber, wood or cane, panels only . . . . .	1.30	1.55	1.85	2.20
Embossed metal . . . . .	3.40	4.90	7.00	10.00
Fiber sports court panel with suspension system . . . . .	3.70	4.60	5.70	7.15
Gypsum board, taped and painted spray-on texture . . . . .	1.35	1.55	1.75	1.95
spray-on texture . . . . .	1.30	1.45	1.60	1.80
Mirror-faced panels . . . . .	12.95	14.60	16.50	18.70
Paint or stain, bottom of roof/floor . . . . .	.40	.54	.74	1.01
Plaster on lath: acoustical . . . . .	2.71	3.11	3.58	4.10
spray-on, thincoat with texture on lath or drywall . . . . .	1.96	2.20	2.48	2.78
standard, add 20% for Keene's add for metal lath . . . . .	2.34	2.71	3.12	3.61
.33 .39 .46 .54				
Plaster on masonry soffit: acous. . . . .	2.31	2.65	3.04	3.49
spray-on, thincoat with texture standard, add 23% for Keene's . . . . .	1.56	1.74	1.95	2.17
1.95 2.24 2.60 2.99				
Plaster panels, decorative . . . . .	8.80	9.80	10.90	12.10
Plastic panels, with suspension system, but excluding lighting (in electrical cost) . . . . .	4.20	5.25	6.50	8.10
Plywood (softwood) or hardboard panels . . . . .	2.00	2.35	2.85	3.45
hardwood . . . . .	2.90	3.65	4.55	5.70
coffered or vaulted panel with molding . . . . .	6.35	8.70	12.00	16.50
custom wood, site-built . . . . .	16.75	19.75	23.50	27.50
Poly laminated panels (FRP) . . . . .	2.05	2.30	2.65	3.05
insulated panel . . . . .	3.20	3.65	4.15	4.75
Wood, boards or T & G, softwood . . . . .	1.95	2.35	2.85	3.45
hardwood . . . . .	3.20	3.85	4.70	5.65
carved, decorative . . . . .	5.50	8.30	12.55	19.00

### CEILING EXTRAS – Add to ceiling costs. For special ornamentation see Section 52.

Ceramic tile, add . . . . .	\$ 8.30	\$11.00	\$14.65	\$19.40
custom tile, decorative . . . . .	18.25	22.50	27.75	34.50
Cust. papers, stenciling, staff, add . . . . .	8.00	11.30	15.95	22.55
border or coving only . . . . .	2.05	2.70	3.60	4.75
Extensive decorating, cust. plaster, terra cotta, add . . . . .	24.75	31.75	40.75	52.00
Wood furring . . . . .	.63	.79	.99	1.24
Metal furring . . . . .	.96	1.23	1.58	2.04
If ceiling structure is required which is not part of the roof or floor structure, add . . . . .	.98	1.25	1.62	2.07
Suspended ceiling, metal, (suspension system) add . . . . .	.87	1.13	1.47	1.93
fiberglass, (FRP) . . . . .	1.40	1.70	2.15	2.65
hardwood, decorative . . . . .	2.35	3.35	4.70	6.60
seismic supports, add . . . . .	.17	.21	.28	.35
Ceiling insulation, add . . . . .	.60	.77	.99	1.27
vinyl faced, exposed . . . . .	.67	.78	.92	1.08
add for underdeck sup. bands . . . . .	.22	.26	.31	.36
rigid board, faced . . . . .	.95	1.26	1.68	2.25
cold storage . . . . .	1.45	1.95	2.60	3.50
for each inch over 2", add . . . . .	.21	.31	.44	.65
vapor barrier, plastic . . . . .	.09	.13	.19	.26

Add 15% for conductive floor coverings.  
For specific cold storage insulation, see Section 58.

### INTERIOR CONSTRUCTION – Apply to total floor area.

Add or deduct 5% for each foot of variation from 14' average story height.

#### FRAME INTERIOR PARTITIONS

	1	2	3	4
Armories . . . . .	\$10.92	\$12.85	\$15.10	\$17.77
Automotive centers . . . . .	4.08	5.46	7.28	9.74
Auto dealerships, complete . . . . .	2.33	3.30	4.68	6.62
Broadcasting facilities . . . . .	23.13	28.19	34.35	41.87
Cold storage facilities . . . . .	.74	1.80	3.39	5.75
Computer centers . . . . .	22.12	24.81	27.81	31.19
Creameries . . . . .	4.43	6.55	9.66	14.26
Garages, minilube . . . . .	14.62	21.26	30.28	43.58
service, lower qualities . . . . .	1.56	2.25	3.26	4.70
higher qualities (incl. fleet service ctrs.) . . . . .	2.42	7.19	14.37	25.10
service shed . . . . .	.52	.75	1.08	1.55
storage . . . . .	1.18	1.72	2.52	3.67
underground parking . . . . .	1.56	2.00	2.57	3.30
Hangars, storage . . . . .	.32	1.24	2.64	4.73
maintenance and offices . . . . .	2.53	3.67	5.32	7.73
Industrials, manufacturing, light . . . . .	.84	1.90	3.51	5.91
heavy . . . . .	13.17	16.14	19.78	24.24
engineering and research . . . . .	3.40	5.86	9.54	15.00
laboratories . . . . .	21.55	25.76	30.80	36.83
Lofts . . . . .	1.98	3.80	6.53	10.64
flex buildings . . . . .	1.52	3.14	5.54	9.14
Miniwarehouses . . . . .	2.42	3.27	4.40	5.94
high-rise facilities . . . . .	2.81	3.78	5.12	6.91
Parking structures, parkades . . . . .	.72	1.39	2.40	3.89
Passenger terminals . . . . .	8.42	14.20	22.86	35.78
Post offices, branch . . . . .	21.97	26.28	31.45	37.62
main . . . . .	21.24	26.63	33.39	41.86
processing facilities . . . . .	3.83	5.86	8.88	13.38
Showrooms . . . . .	4.21	5.78	7.92	10.86
T-hangars . . . . .	.87	1.14	1.51	1.98
Warehouses, storage . . . . .	.26	.99	2.07	3.69
distribution . . . . .	1.57	2.55	4.00	6.17
mega storage/distribution . . . . .	.13	1.17	2.70	4.98
transit . . . . .	2.95	4.06	5.60	7.71
Add for masonry partitions . . . . .	15%	12%	10%	10%

### MEZZANINES – Apply to open mezzanine area. (Cost of miscellaneous items such as rail, stairs, etc.)

	\$1.85	\$2.35	\$3.05	\$3.85
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**MISCELLANEOUS – Apply to total square feet of building area, if required. These costs vary greatly, and the following typical cost ranges should be used with caution. Built-in equipment which is normally included under the general contract is included in the interior construction costs.**

Laboratories, fixed equipment . . . . .	\$11.50	\$14.25	\$17.25	\$21.50
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**STORAGE VAULTS – Per square foot of vault area, excluding doors. Add or deduct 2% for each foot of height variation from the 14' standard. For more detailed costs see Section 52, Page 5.**

Record storage . . . . .	\$50.50	\$56.50	\$62.75	\$69.75
Modular vault systems, insulated/record storage . . . . .	33.50	41.00	50.25	61.50

### CATWALKS – Apply to linear footage of walkway.

Catwalks, steel . . . . .	\$70.50	\$82.25	\$96.00	\$112.25
wood . . . . .	61.50	71.50	83.00	96.25
Ladders, steel . . . . .	11.00	14.75	19.75	26.50
wood . . . . .	9.75	13.00	17.25	23.50

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**PLUMBING – Apply Table I to total floor area. Use Table II or Section 53 for more detail.**

**TABLE I – Typical cost ranges.**

	1	2	3	4
Armories .....	\$ 3.31	\$ 4.17	\$ 6.03	\$ 8.71
Automotive centers .....	1.91	2.85	4.25	6.33
Auto dealerships, complete ...	1.94	2.90	4.36	6.53
Broadcasting facilities .....	2.08	3.06	4.50	6.61
Cold storage facilities .....	.77	1.39	2.31	3.67
Computer centers .....	3.21	4.25	5.60	7.40
Creameries .....	3.94	6.25	9.69	14.83
Garages, minilube .....	3.72	5.95	9.28	14.29
service, lower qualities .....	1.44	2.42	3.87	6.03
higher qualities (incl. fleet service centers) .....	2.41	3.93	6.19	9.59
service shed .....	.21	.31	.46	.69
storage .....	.95	1.44	2.20	3.32
underground parking .....	1.04	1.34	1.72	2.20
Hangars, storage .....	.42	.85	1.50	2.46
maintenance and offices ...	1.43	2.57	4.28	6.82
Industrials, manufacturing, light heavy .....	1.04	1.71	2.70	4.17
engineering and research ...	2.67	3.91	5.72	8.36
laboratories .....	10.33	14.93	21.56	31.15
Lofts .....	1.40	2.53	4.24	6.80
flex buildings .....	1.12	1.88	3.01	4.70
Miniwarehouses .....	.23	.63	1.21	2.10
high-rise facilities .....	.37	.80	1.45	2.41
Parking structures, parkades ...	.43	.85	1.46	2.38
Passenger terminals .....	4.74	7.01	10.36	15.31
Post offices, branch .....	2.59	3.48	4.69	6.30
main .....	2.90	4.07	5.71	8.01
processing facilities .....	3.19	4.41	6.15	8.46
Showrooms .....	2.84	3.99	5.61	7.88
T-hangars .....	.30	.50	.91	1.25
Warehouses, storage .....	.61	1.10	1.85	2.96
distribution .....	1.61	2.41	3.60	5.39
mega storage/distribution ...	.20	.43	.79	1.32
transit .....	2.39	3.09	4.00	5.18

**TABLE II – ALTERNATE METHOD – Apply to total number of fixtures. Do not use these costs if Table I is used.**

Cost per fixture .....	\$1,875	\$2,675	\$3,775	\$5,375
Cost per tap or drain without fixture .....	365	470	600	770

**SPRINKLERS – Apply to sprinklered area. Costs include all piping for ordinary-hazard occupancies but do not include tanks. For extra-hazard occupancies, such as hangars, add 15% to the costs below. For supplemental in-rack systems, add 30% to 100% per level. For early-suppression, fast-response system, add \$.28 plus \$.58 to \$.87 for pumps. Chemical systems: see Section 53. For further discussion, see Sections 14 and 40.**

2,500 square feet .....	\$2.13	\$2.82	\$3.72	\$4.91
5,000 .....	1.93	2.52	3.29	4.30
10,000 .....	1.73	2.24	2.92	3.78
15,000 .....	1.63	2.10	2.71	3.50
20,000 .....	1.56	2.01	2.59	3.32
30,000 .....	1.46	1.87	2.40	3.08
40,000 .....	1.41	1.79	2.29	2.92
50,000 .....	1.36	1.73	2.20	2.79
60,000 .....	1.32	1.67	2.13	2.71
80,000 .....	1.26	1.61	2.02	2.56
100,000 .....	1.22	1.54	1.95	2.45

**SPRINKLERS (Continued)**

	1	2	3	4
125,000 square feet .....	\$1.19	\$1.50	\$1.87	\$2.35
150,000 .....	1.16	1.45	1.82	2.28
200,000 .....	1.11	1.39	1.73	2.16
250,000 .....	1.07	1.33	1.66	2.07
300,000 .....	1.04	1.30	1.62	2.00
400,000 .....	1.00	1.24	1.53	1.89
600,000 .....	.94	1.16	1.43	1.76
800,000 .....	.90	1.11	1.35	1.66
1,000,000 .....	.87	1.07	1.30	1.60

**HEATING, COOLING AND VENTILATING – Apply to total floor area.**

Add or deduct 3% for each foot of variation in average story height from 14' base.

Costs are given for gas-fired heating surfaces. Add or deduct as follows for other fuels.

Oil-fired +7%      Coal, stoker +7%      Coal, hand-fired -2%  
For Passenger Terminals, Research Labs and Cold Storage Buildings, use costs in the Calculator Section.

**Heating Only**

Electric cable or baseboard ..	\$2.35	\$2.95	\$3.70	\$4.65
radiant panels .....	2.10	2.40	2.80	3.20
Electric wall heaters (incl. FWA) ..	1.10	1.30	1.50	1.75
Forced air .....	2.60	3.25	4.05	5.10
Hot water, baseboard or radiators ..	4.55	5.80	7.35	9.35
radiant floor .....	4.50	5.85	7.65	9.95
Radiant heat, gas, suspended .....	1.40	1.80	2.35	3.05
Space heaters, gas, with fan ..	1.15	1.50	2.00	2.60
steam coil, with boiler .....	1.90	2.35	2.90	3.60
steam coil, without boiler ..	1.40	1.80	2.25	2.90
Steam radiator, with boiler ...	4.20	5.20	6.45	8.00
without boiler .....	3.45	4.40	5.55	7.05
Wall or floor furnace .....	1.25	1.45	1.75	2.05
Wood burning furnace, exterior .....	1.32	1.62	1.98	2.43

**Heating and Cooling**

Zoned A.C., hot and chilled water .....	\$11.50	\$14.25	\$17.60	\$21.80
warm and cooled air .....	6.80	8.55	10.75	13.55
Pkg. heating & cooling, short ducts .....	5.15	6.45	8.10	10.20
Heat-pump system .....	5.80	7.60	10.00	13.15
add for ground-loop heat source .....	1.10	1.60	2.30	3.30
Individual thru-wall heat pump .....	2.50	3.25	4.20	5.45

**Cooling Only**

Evaporative coolers .....	\$2.20	\$2.55	\$2.95	\$3.40
Refrigerated air conditioning only, zoned system .....	4.55	5.60	6.90	8.50
package unit, short ducts ..	3.15	3.80	4.60	5.55
Ventilation only, w/ ducts & blowers .....	.80	1.00	1.20	1.50

**MISCELLANEOUS – Apply to square feet of floor area of described laminar flow coverage. These costs vary greatly and the following typical cost ranges should be used with caution.**

Clean rooms,				
class 100,000 to 10,000 ...	\$115	\$ 155	\$ 210	\$ 280
class 1,000 to 100 .....	350	425	510	615
class 100 to 10 .....	600	1,025	1,675	2,650

# GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

## SECTION SEG 4 (SEGREGATED COST METHOD)

**ELECTRICAL AND LIGHTING – Apply to total floor area. Broadcasting facilities, computer centers, laboratories, passenger terminals and other buildings with heavy demand loads are not included in the general tables.**

	1	2	3	4
<b>Few Outlets:</b>				
Nonmetallic .....	\$1.30	\$1.72	\$2.25	\$2.98
Armored cable (BX) .....	1.57	2.06	2.70	3.53
Flexible conduit .....	1.89	2.46	3.21	4.18
Rigid conduit .....	2.29	2.96	3.83	4.95
<b>Average Number of Outlets:</b>				
Nonmetallic .....	\$2.28	\$2.98	\$3.89	\$5.09
Armored cable (BX) .....	2.72	3.54	4.63	6.04
Flexible conduit .....	3.23	4.21	5.49	7.16
Rigid conduit .....	3.85	5.02	6.52	8.49
<b>Many Outlets:</b>				
Nonmetallic .....	\$3.98	\$5.17	\$ 6.71	\$ 8.70
Armored cable (BX) .....	4.69	6.09	7.94	10.33
Flexible conduit .....	5.51	7.19	9.39	12.27
Rigid conduit .....	6.49	8.49	11.12	14.56
<b>Unfinished Areas:</b>				
Nonmetallic .....	\$.81	\$1.09	\$1.44	\$1.93
Armored cable (BX) .....	1.01	1.32	1.73	2.27
Flexible conduit .....	1.25	1.62	2.07	2.66
Rigid conduit .....	1.55	1.96	2.48	3.12
<b>Typical costs for some occupancies.</b>				
Armories .....	\$ 4.47	\$ 5.75	\$ 7.40	\$ 9.54
Automotive centers .....	3.28	4.66	6.63	9.44
Auto dealerships, complete .....	4.50	6.41	9.14	13.04
Broadcasting facilities .....	9.11	12.53	17.24	23.71
Cold storage facilities .....	2.59	3.85	5.74	8.57
Computer centers .....	12.95	17.04	22.42	29.50
Creameries .....	3.08	4.90	7.62	11.70
Garages, mini-lube .....	3.95	6.02	9.11	13.73
service, lower qualities .....	2.39	3.91	6.18	9.60
higher qualities (incl. municipal service ctrs.) .....	3.89	6.62	10.69	16.76
service shed .....	.91	1.36	2.04	3.05
storage .....	1.78	2.77	4.27	6.49
underground parking .....	2.52	3.10	3.82	4.70
Hangars, storage .....	1.18	1.82	2.76	4.17
maintenance and offices .....	3.34	5.02	7.51	11.25
Industrials, manufacturing, light .....	2.05	3.65	6.06	9.66
heavy .....	8.58	10.57	13.02	16.04
engineering and research .....	4.44	6.48	9.44	13.76
laboratories .....	13.00	17.23	22.81	30.23
Lofts .....	3.10	4.91	7.60	11.63
flex buildings .....	1.96	3.26	5.21	8.13
Miniwarehouses .....	1.10	1.62	2.39	3.51
high-rise facilities .....	1.33	1.96	2.89	4.27
Parking structures, parkades .....	1.32	2.24	3.62	5.69
Passenger terminals .....	7.54	11.51	17.47	26.39
Post offices, branch .....	7.69	10.04	13.12	17.14
main .....	8.36	10.95	14.31	18.73
processing facilities .....	10.95	14.86	20.16	27.37
Showrooms .....	5.87	8.03	10.98	15.00
T-hangars .....	.99	1.47	2.18	3.23
Warehouses, storage .....	.98	1.74	2.86	4.55
distribution .....	2.31	3.76	5.93	9.15
mega storage/distribution .....	1.11	2.04	3.40	5.43
transit .....	2.89	4.33	6.48	9.69

**EXTERIOR WALL – Apply to total wall area.**

**Concrete or Masonry Walls**

	1	2	3	4
Adobe or hollow clay block, 6" .....	\$12.98	\$14.73	\$16.73	\$18.99
8" .....	13.89	15.85	18.07	20.61
12" .....	15.83	18.02	20.52	23.35
14" .....	17.48	19.92	22.69	25.86
Adobe block, grouted/cavity .....				
22" – 24" .....	20.11	22.96	26.21	29.92
30" – 32" .....	21.80	24.82	28.25	32.15
Block, concrete, 6" .....	11.35	12.87	14.60	16.56
8" .....	12.20	13.83	15.68	17.77
12" .....	13.94	15.81	17.92	20.32
16" .....	15.69	17.80	20.20	22.92
for each add'l 4" of block, add .....	1.75	2.00	2.25	2.60
Block, grouted or cavity, 10" – 12" .....	13.19	14.93	16.89	19.11
*Add for ornamented face block .....	.95	1.45	2.15	3.20
Brick, block backup, 8" .....	14.66	16.63	18.88	21.42
12" .....	16.40	18.61	21.12	23.97
16" .....	18.15	20.60	23.39	26.55
Brick, common, 8" .....	16.41	18.60	21.09	23.90
12" .....	20.16	22.77	25.72	29.05
16" .....	23.95	26.98	30.39	34.24
for each add'l 4" of brick, add .....	3.80	4.20	4.70	5.15
Brick, grouted or cavity, .....				
reinforced, 9"–10" .....	18.02	20.41	23.11	26.18
block backup, 9"–10" .....	16.31	18.48	20.93	23.71
block backup, 12"–14" .....	18.06	20.47	23.20	26.29
Brick, 6" SCR modular .....	12.36	14.15	16.19	18.52
8" .....	13.83	15.72	17.88	20.33
*Add for face brick .....	2.05	2.25	2.50	2.75
Concrete, reinforced, formed, 4" .....	12.71	14.45	16.46	18.72
6" .....	13.70	15.55	17.67	20.06
8" .....	14.74	16.70	18.92	21.44
12" .....	16.85	19.02	21.46	24.21
for each add'l 4" of conc., add .....	2.10	2.30	2.55	2.75
precast panels, 2" .....	10.54	11.99	13.64	15.51
4" .....	11.21	12.74	14.49	16.47
6" .....	12.30	13.97	15.86	18.01
8" .....	13.68	15.47	16.57	19.77
12" .....	16.17	18.15	20.37	22.86
tilt-up panels, 4" .....	10.49	12.00	13.73	15.70
6" .....	11.23	12.87	14.76	16.92
8" .....	12.08	13.86	15.91	18.25
10" .....	13.05	14.97	17.18	19.72
12" .....	14.04	16.12	18.50	21.25
add for insulated sandwich .....	1.10	1.40	1.70	2.10
Glass block, white or aqua .....	31.00	33.25	35.50	38.00
colors or reflective .....	41.50	44.25	47.00	50.00
Local field stone, in mortar, 12" .....	18.75	21.50	24.50	27.75
for each 4" variation in thickness .....	1.65	1.95	2.25	2.65
Local stone, block backup, .....				
ashlar veneer, 12" .....	26.25	30.00	34.75	40.00
rubble or rustic, veneer, 12" .....	21.00	24.25	28.25	33.00
for each 4" variation in thickness .....	1.75	2.00	2.25	2.60
Local stone, rough cut, solid, 12" .....	30.75	37.25	44.50	53.25
granite .....	32.25	40.25	49.75	62.25
limestone .....	34.75	41.50	49.50	59.50
for each 6" variation in thickness .....	14.25	16.75	19.75	23.00
Rammed-earth, soil cement, 24" .....	13.95	16.25	18.80	21.85
pneumatic build-up, formed .....				
one side .....	22.00	25.05	28.60	32.45
for each 6" variation .....				
in thickness, add or deduct .....	.90	1.05	1.20	1.40
Tile, structural clay, 6" .....	12.01	13.76	15.75	18.04
10" .....	14.11	16.12	18.41	21.03

**\*NOTE:** The additional cost for face block or brick is the difference between the cost of face block or brick and standard block or common brick in place as part of a wall. For the cost of ornamented, face, or synthetic masonry veneer, see Wall Ornamentation on Page 8.

# GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

## SECTION SEG 4 (SEGREGATED COST METHOD)

**EXTERIOR WALL (Continued)**

**Concrete or Masonry Wall Extras**

	1	2	3	4
Add for stay-in-place forming . . .	\$ .72	\$ .97	\$ 1.30	\$ 1.76
Add for glazed block or tile, /side	4.30	4.80	5.40	6.05
Add for pilasters . . . . .	.77	.95	1.17	1.43
Add for bond beams . . . . .	.83	1.00	1.21	1.46
Add for synthetic plaster on rigid insulation (EIFS) . . . .	3.35	4.15	5.00	6.15
deluxe, textured or aggregate	5.60	6.65	8.00	9.45
Add for thin masonry on rigid insul.	8.55	9.50	10.60	11.85
Add for clay tile backup in lieu of block . . . . .	1.40	1.65	1.95	2.35
Add for earth-sheltered waterproofing	.63	.96	1.45	2.20
Add for insulation . . . . .	.51	.74	1.07	1.54
earth-sheltered structures . .	.83	1.22	1.82	2.70

For special stonework, see Section 56.

**Curtain Walls**

Brick or tile panels . . . . .	\$16.50	\$19.50	\$23.50	\$27.75
Concrete & glass panels, precast	20.25	23.50	27.00	31.00
glass fiber reinforced, molded	16.75	20.75	25.00	30.75
Metal and glass panels (ordinary)	22.25	26.50	31.00	36.50
Stainless steel or bronze & glass	32.50	37.75	43.50	50.25
Stone panels, local stone . . . .	30.00	33.00	36.50	40.50
granite . . . . .	32.50	36.75	41.75	47.25
limestone or slate . . . . .	30.75	33.75	37.50	41.25
marble . . . . .	30.75	35.00	40.00	45.50
composite or aggregate panels	20.00	24.75	30.75	38.00
Structural glazed atrium (including supports) . . . . .	48.50	64.25	85.25	113.25
Steel studs and stucco . . . . .	11.75	13.75	16.25	19.00
synthetic plaster on rigid insulation (EIFS) . . . . .	13.50	16.00	19.25	23.00
deluxe, textured or aggregate	15.75	18.75	22.25	26.50
wood/aggregate board siding	11.50	14.25	17.50	21.50
Add for insul., insulated areas only	.66	.99	1.43	2.15

**Pre-engineered Walls**

Sandwich panels, alum. or steel, both sides . . . . .	\$12.10	\$14.25	\$16.80	\$19.75
cold storage, metal, both sides	15.15	17.35	19.90	22.85
cement fiber or shotcrete, 2 sides	9.10	11.05	13.55	16.50
fiberglass panels, two sides	11.55	14.10	17.15	20.90
glass exterior, metal interior	13.50	17.05	18.85	22.30
add for stainless steel or textured (Galbestos) . . . .	2.15	2.60	3.10	3.70
add for poly laminated (FRP) interior	.55	.65	.85	1.05
deduct for gypsum or hardboard interior . . . . .	.94	1.02	1.11	1.21
Prefabricated building panels				
alum. or steel and glass panels	18.00	19.75	22.00	24.25
add for porcelain enamel fin.	1.80	2.20	2.65	3.20
add for block backup . . . .	3.80	4.30	4.80	5.40
stucco on steel panel . . . . .	19.50	22.00	24.50	27.50
ven., block/brick, on steel panel	22.25	25.25	29.00	33.00
stone, rubble or rustic . . . .	28.50	31.75	35.00	38.75

**EXTERIOR WALL (Continued)**

**Single-wall Construction**

	1	2	3	4
Aluminum or steel, on steel frame	\$ 4.29	\$ 5.43	\$ 6.88	\$ 8.70
on wood frame . . . . .	3.85	4.91	6.26	7.99
add for porcelain enamel finish	1.80	2.20	2.65	3.20
add for stainless steel or textured (Galbestos) . . . .	2.15	2.60	3.10	3.70
Cement fiber (Transite), on steel frame . . . . .	4.79	6.09	7.77	9.90
sheet siding on wood frame	4.35	5.58	7.16	9.19
siding/shingles on wood frame	4.73	6.01	7.62	9.67
Fiberglass panels, on steel frame	4.17	5.40	7.01	9.08
on wood frame . . . . .	3.73	4.88	6.39	8.36
Glass panels . . . . .	12.10	16.15	21.60	28.90
projected greenhouse . . . . .	29.50	33.75	38.75	44.50
Log, up to 10" diameter . . . . .	11.30	14.90	19.75	26.15
deluxe, hand-hewn or oversized	15.95	20.50	26.35	33.85
Plywood, boards or siding, on steel frame . . . . .	4.41	5.49	6.83	8.49
on wood frame . . . . .	3.97	4.97	6.22	7.78
Stucco, on baled straw . . . . .	10.35	12.40	14.85	17.80
Stucco, on wood frame . . . . .	4.58	5.51	6.63	7.99
Synthetic plaster on rigid insul. (EIFS), on steel frame . . . . .	6.60	8.04	9.80	11.94
Wood shingles on wood frame	4.82	5.80	6.99	8.40
Add for exterior sheathing, /layer	.79	.90	1.02	1.17
Add for interior sheathing or liner, fin. poly laminated panel (FRP) . .	1.80	2.20	2.65	3.20
Add for stud wall backing . . . .	.50	.61	.74	.89
Add for insulation . . . . .	.47	.57	.70	.86
vinyl faced, exposed . . . . .	.64	.72	.79	.89
rigid board, faced . . . . .	.83	1.09	1.42	1.87
Add for air infiltration wrap . . .	.13	.18	.22	.29

## GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

### SECTION SEG 4

(SEGREGATED COST METHOD)

**EXTERIOR WALL (Continued)**

**Wood or Steel Stud Walls**

	1	2	3	4
Alum. or steel siding, horizontal	\$ 9.46	\$11.13	\$13.10	\$15.42
sheet panels	8.45	10.04	11.95	14.21
Asphalt siding	8.31	9.71	11.36	13.29
Cement fiber, siding or shingles, horizontal	9.14	10.67	12.45	14.54
sheet, embossed	8.72	10.18	11.86	13.83
Hardboard siding or shingles, horizontal	9.08	10.58	12.33	14.37
sheet, embossed	8.67	10.09	11.73	13.64
Plywood, textured	8.42	9.85	11.53	13.50
deluxe, redwood, cedar, etc.	9.38	11.01	12.91	15.15
Shingles or shakes, wood	9.54	11.24	13.27	15.64
Stucco	9.36	11.03	12.99	15.31
Synthetic plaster on rigid insulation (EIFS)	10.96	12.96	15.31	18.11
deluxe, textured or aggregate	12.87	15.25	18.05	21.37
Vinyl siding	9.38	11.04	12.99	15.29
Wood siding	9.09	10.65	12.49	14.64
deluxe, redwood, cedar, etc.	9.86	11.69	13.86	16.45
log veneer siding	10.35	12.85	15.95	19.80
deluxe, half round, full corners	16.10	18.30	20.80	23.65
Veneer, face block/concrete brick	11.75	13.75	16.05	18.75
common brick	11.95	13.95	16.35	19.15
face brick	13.70	15.95	18.60	21.65
mortarless brick	13.85	16.00	18.55	21.45
stone, ashlar veneer	20.90	24.60	29.00	34.10
rubble or rustic	16.65	19.70	23.20	27.40
synthetic veneer or panel	11.55	14.20	17.45	21.40
thin veneer on rigid insulation	14.65	17.00	19.80	23.00
Add for sheathing	.62	.76	.95	1.18
Add for insulation	.46	.56	.68	.84
Add for air infiltration wrap	.15	.20	.24	.31
Add for double-stud walls	.96	1.18	1.44	1.76
Add for wood stressskin sandwich panels	3.10	3.65	4.35	5.10

**HANGAR DOORS – Per square foot of door. For fabric curtain doors, use rank 4 base costs where costs may vary from a plus 20% to minus 10%.**

	1	2	3	4
Steel doors,				
small hangars, 20' high	\$12.50	\$18.00	\$26.25	\$37.75
medium hangars, to 40' high	26.50	33.75	43.50	55.75
large hangars, over 40' high	40.50	49.50	60.50	74.25

**MISCELLANEOUS – Apply to total square feet of lined area if required.**

Metal shielding, radio frequency radiation protection	\$16.25	\$22.25	\$30.50	\$41.75
Ballistic shielding, fiberglass panels	9.25	11.75	14.75	19.00
Cold storage, insulation board for each inch over 2", add	15.50	22.25	32.25	46.25
	1.25	1.65	2.20	2.85
	.21	.31	.44	.65

**STAINED GLASS – Apply to art glass in window, dome or skylight area. These costs vary greatly, and the following typical cost ranges should be used with caution. See Section UIP 6 for complete description and detailed costs. For residential straight seams or simple bevel, deduct 50% from the Low Cost.**

Low cost, plain, min. work or detailed bevel-etched	\$ 46.75	\$ 63.00	\$ 85.00	\$114.75
Average, simple figures and scenes	119.00	164.00	227.00	315.00
High cost, highly detailed work (including domes)	295.00	420.00	590.00	835.00

# GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

## SECTION SEG 4 (SEGREGATED COST METHOD)

**WALL ORNAMENTATION – Apply to ornamented area.**

	1	2	3	4
Brick, split face, Roman or Norman \$	7.50	\$ 8.65	\$ 9.95	\$ 11.50
face, standard size	8.15	9.45	11.00	12.75
mortarless brick	8.60	9.85	11.30	12.95
select common	7.25	8.40	9.75	11.30
used	7.90	9.15	10.50	12.10
sim. veneer or panel, 1/4"– 3/8"	6.50	7.85	9.55	11.60
thin veneer on rigid insulation	8.55	9.50	10.60	11.85
add for pictorial carved artwork	104.50	119.75	137.25	157.25
Cement fiber siding	2.10	2.55	3.10	3.75
Concrete, ornamental cast stone	16.50	19.75	23.75	28.25
Concrete block, imitation flagstone	6.60	7.70	9.00	10.50
solar screen	7.15	8.35	9.80	11.45
ornamental face, slump, fluted, split or ground	7.10	8.20	9.45	10.90
glazed one side, add	4.30	4.80	5.40	6.05
Cut stone, carved	69.75	101.25	146.50	212.25
Glass block, white or aqua	27.00	30.00	33.00	36.50
colors or solar reflective	37.50	41.00	44.75	49.00
Granite, ashlar or panel	34.00	39.25	45.75	52.75
Limestone, ashlar or panel	25.00	29.50	34.75	40.75
Local stone, ashlar veneer or panel	22.00	25.75	30.25	35.50
rubble or rustic	16.25	19.25	23.00	27.50
imitation precast stone	7.45	9.65	12.50	16.25
Marble, panels	28.00	32.75	38.50	45.00
Metal panels, screens, louvers	11.75	15.50	20.25	26.75
preformed wall panels	2.15	3.90	6.55	10.45
add for curved panels	.60	.90	1.25	1.85
Ornamental doorways	43.00	83.50	144.00	233.75
Slate, panels	24.25	27.75	32.00	36.75
Stucco	2.65	2.95	3.35	3.75
on masonry	2.10	2.35	2.70	3.10
add for synthetic on rigid insulation (EIFS)	1.65	2.15	2.75	3.60
*built-up (EIFS) panel relief	3.60	4.60	5.90	7.60
Terra cotta	19.50	23.00	27.00	32.00
Tile, ceramic	9.25	10.75	12.50	14.25
*mosaics	14.00	17.00	20.25	24.75
hand-painted tiles	74.25	102.75	142.75	198.00
Vinyl siding	2.25	2.70	3.25	3.85
Vitrolite (structural glass)	15.75	18.50	21.50	25.25
Wood, plywood	1.80	2.30	2.85	3.65
shingles	2.50	2.95	3.60	4.25
siding	2.30	2.85	3.50	4.35
ornamented molding or trim	7.45	10.10	13.75	18.70
add for treated wood	.34	.42	.51	.62
*For pictorial artwork, add	7.75	10.75	14.75	20.75

**BASEMENT WALLS – Apply to basement wall area.**

	1	2	3	4
Concrete block, reinforced, 6"	\$ 7.55	\$ 8.55	\$ 9.65	\$10.85
8"	8.40	9.50	10.80	12.15
12"	10.20	11.50	13.05	14.75
for each additional 4" of block, add	1.75	2.00	2.25	2.60
Concrete, reinforced, 6"	9.10	10.25	11.60	13.10
8"	10.25	11.50	13.00	14.60
12"	12.30	13.80	15.45	17.35
16"	14.40	16.10	18.00	20.15
for each additional 4" of concrete, add	2.10	2.30	2.55	2.75
Masonry, brick, 8"	12.55	14.15	15.95	18.00
stone, 12"	17.60	20.40	23.70	27.50
for each 4" var. in thickness	3.80	4.20	4.70	5.15
Wood, treated	7.05	8.70	10.80	13.30
Add for stay-in-place forming	.45	.66	.97	1.43
Add for waterproofing	.70	.87	1.08	1.34
earth-sheltered structures	.87	1.29	1.90	2.81
Add for insulation	.52	.74	1.06	1.52
earth-sheltered structures	.83	1.22	1.82	2.70

For specific earth-sheltered waterproofing, see Section UIP 1.

**EXTERIOR AND BASEMENT STAIRS – Per riser.**

Concrete	\$119.00	\$165.00	\$229.00	\$317.00
Steel pans or prefab. concrete on steel	132.00	179.00	243.00	330.00
Steel or aluminum grating	155.00	205.00	270.00	360.00
Wood	44.00	69.00	107.50	167.00

For fire escapes, see Section UIP 5.

**EXTERIOR BALCONIES – Apply to balcony area.**

Concrete	\$13.25	\$17.00	\$22.00	\$28.50
Steel	12.00	16.50	22.75	31.25
Wood	10.75	14.50	19.50	26.50
Add for ornate finishes, balustrades	11.25	14.00	17.00	21.25



# GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

## SECTION SEG 4 (SEGREGATED COST METHOD)

### ROOF STRUCTURE – Apply to roof area.

	1	2	3	4
Concrete joists, slab . . . . .	\$ 7.22	\$ 8.20	\$ 9.32	\$10.58
lift slab . . . . .	6.60	7.43	8.36	9.42
pan or waffle slab and joists	6.71	7.58	8.56	9.66
precast joists and deck . . . .	6.34	7.16	8.10	9.15
precast joists, wood deck . .	5.08	5.71	6.42	7.22
cored plank on bearing walls	5.63	6.35	7.15	8.05
thin shell . . . . .	10.45	12.55	15.15	18.15
Concrete dome, cast-in-place .	24.50	26.80	29.35	32.20
thin shell . . . . .	15.95	17.90	20.10	22.55
Fabric roof, air supported . . . .	26.25	28.25	30.75	33.25
tension supported . . . . .	29.50	32.50	36.00	40.00
add for thermal liner . . . . .	2.55	3.10	3.80	4.70
Steel joists, concrete slab . . . .	7.74	8.97	10.38	12.03
gypsum on formboard . . . . .	3.44	4.57	6.06	8.04
precast deck . . . . .	6.78	7.82	9.04	10.44
steel deck . . . . .	3.65	4.93	6.64	8.97
light-gauge truss joints . .	3.04	4.16	5.71	7.82
steel deck, gypsum or concrete	4.87	6.36	8.29	10.81
wood or composition deck . .	3.01	4.09	5.54	7.52
light-gauge truss joists . .	2.46	3.43	4.79	6.67
Open steel system for corrugated metal . . . . .	1.76	2.54	3.67	5.31
light purlin supports only . . .	.84	1.09	1.41	1.84
Steel space frame and sheathing (three dimensional) . . . . .	12.40	16.50	21.75	28.90
arch. (exclusive of glazing) . .	20.75	31.00	47.00	71.00
Metal dome and cover . . . . .	19.25	22.00	25.25	29.25
glazed or translucent panels	41.25	50.50	62.00	76.00
Wood joists, wood or comp. deck	2.34	3.34	4.76	6.79
exp. rafters, 2" T&G sheathing	3.81	5.05	6.71	8.91
prefab. panels (excl. of girders)	1.20	1.51	1.89	2.39
stresskin sandwich panels (exclusive of purlins) . . . . .	4.40	5.67	7.32	9.46
add for snow roof, furred sheathing layer . . . . .	1.33	1.46	1.62	1.78
Open wood system for corrugated metal . . . . .	1.17	1.85	2.95	4.68
light purlin supports only for metal, wood or fiberglass	.44	.61	.85	1.17
Lamella . . . . .	8.15	9.90	12.10	14.60
Wood dome and deck . . . . .	13.25	16.25	19.75	24.50
Add for monitor roof . . . . .	60%	50%	40%	40%
Add for sawtooth roof . . . . .	40%	35%	30%	25%
Add for complex roof turrets, ornate trim . . . . .	70%	55%	45%	35%

For treated wood, increase costs by 10% to 20%.

### ROOF COVER – Apply to roof area.

	1	2	3	4
Aluminum or steel, corr., crimped or tile panels, preformed, light, to 26 gauge	\$ 1.25	\$ 1.65	\$ 2.15	\$ 2.85
heavy, under 26 gauge . . . . .	2.60	3.10	3.65	4.30
formed seam, flat or standing	3.05	3.95	5.25	6.80
batten seam . . . . .	3.60	4.60	5.95	7.70
sandwich panels, pre-engin.	4.75	6.35	8.45	11.40
cold storage . . . . .	11.85	13.75	16.05	18.70
shingles . . . . .	2.35	3.05	3.80	4.85
aggregate finish . . . . .	3.20	4.00	5.05	6.35
thatch . . . . .	11.30	12.50	13.85	15.40
add for interior liner, metal . .	1.20	1.40	1.60	1.85
plastic . . . . .	1.10	1.25	1.50	1.75
add for porcelain enamel finish	1.80	2.20	2.65	3.20
add for stainless steel or textured (Galbestos) . . . .	2.15	2.60	3.10	3.70
Asphalt, corrugated . . . . .	.95	1.15	1.40	1.70
Atrium skylight, frame and glazing	21.00	28.50	38.75	52.75
Built-up composition . . . . .	1.08	1.44	1.91	2.55
Cement fiber, shingles . . . . .	2.40	3.15	4.05	5.30
corrugated or sheet (Transite)	2.20	3.25	4.85	7.15
Composition, roll, mineral surface	.61	.76	.95	1.19
Composition shingles, light to 235#	1.07	1.24	1.44	1.68
heavy, over 235# . . . . .	1.40	1.80	2.35	3.10
Copper, flat or standing seam . .	7.30	8.70	10.30	12.20
batten seam . . . . .	7.85	9.30	11.05	13.10
shingles . . . . .	7.35	8.05	8.80	9.65
Elastomeric or modified bitumen, single ply . . . . .	1.95	2.65	3.65	4.95
reinf. sheet or spray-fluid coat	3.40	4.15	5.00	6.05
Fiberglass, corrug. or sheet, light	1.25	1.55	1.80	2.20
sandwich panels . . . . .	2.20	2.55	2.95	3.40
heavy, (FRP), over 8 oz. . . . .	2.40	3.15	4.05	5.25
Slate . . . . .	4.70	5.80	7.15	8.85
red . . . . .	8.95	11.15	13.95	17.45
composite, reinforced fiber . .	3.35	4.20	5.25	6.50
Terne, flat or standing seam . . .	6.75	8.10	9.75	11.65
batten seam . . . . .	7.30	8.75	10.50	12.55
Tile, clay . . . . .	3.95	5.35	7.25	9.80
concrete . . . . .	3.15	3.80	4.55	5.50
plastic or rubber . . . . .	2.70	3.25	3.90	4.75
add for custom coloring or glazing	.85	1.05	1.30	1.70
Wood, shakes . . . . .	2.25	2.70	3.25	3.85
shingles . . . . .	2.05	2.50	2.95	3.65
fiber shingles . . . . .	1.40	1.70	2.10	2.60
plywood sheets . . . . .	.80	.95	1.10	1.30
add for fire-resistant finish . .	.34	.42	.51	.62
Add for roof insulation . . . . .	.61	.94	1.45	2.25
earth-sheltered structures . . .	.91	1.44	2.27	3.58
Add for earth-sheltered waterproofing	.80	1.22	1.87	2.86

**NOTE:** For underroof insulation and supporting structures, see Ceiling Extras on Page 3. For specific earth-sheltered waterproofing, see Section UIP 1. For earthen roof cover, see Fill costs on Page 1. For cold storage insulation, see Ceiling Extras or Section UIP 8 for detailed costs.

# GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

## SECTION SEG 4 (SEGREGATED COST METHOD)

**ROOF MODIFIERS – Use the following multipliers for sloping roofs 6' : 12' or greater to convert the unit costs to cost per square foot of horizontal roofed area.**

Rise :	Run	Multiplier	Rise :	Run	Multiplier
6' :	12'	1.12	12' :	12'	1.42
8' :	12'	1.20	18' :	12'	1.80

**TRUSSES AND GIRDERS – Apply to area supported.**

	1	2	3	4
Steel trusses or longspan girders	\$1.67	\$2.21	\$2.92	\$3.84
Timber trusses . . . . .	1.84	2.43	3.22	4.27
Glued, laminated trusses or girders	1.71	2.22	2.90	3.78

**CANOPIES OR MARQUEES – Apply to horizontal area. For light false mansard structures, deduct 50%. For greater detail, see Section UIP 4 or 6.**

Wood frame . . . . .	\$16.00	\$19.75	\$24.75	\$31.00
Steel frame . . . . .	19.25	24.50	31.25	40.25

**MISCELLANEOUS**

Automotive lifts . . . . .	Section UIP 14
Automotive repair and lube equipment	Section UIP 15
Automotive spray booths . . . . .	Section UIP 15
Cranes, elevators and material handling	Section UIP 8
Security systems . . . . .	Section UIP 3
Shipping dock equipment . . . . .	Section UIP 15
Site paving and fencing, railroad spurs	Section UIP 16
Sound systems . . . . .	Section UIP 2
Storage tanks . . . . .	Section UIP 11
Warehouse racks and equipment	Section UIP 15

**NUMBER OF STORIES MULTIPLIER**

To allow for the cost of hoisting materials, increased labor costs, and miscellaneous costs due to high-rise construction, multiply the total Segregated Costs of aboveground portions of the building by 100% plus .25% for each story over three.

**Example:** Seven-story building: Multiplier = 1.010

**SPECIAL HEIGHT MULTIPLIER – TALL BUILDINGS**

To allow for the cost of hoisting materials, increased labor costs, and other increased costs due to great wall heights on major hangars or other tall single-story buildings, multiply the total Segregated Cost of these buildings by 100% plus .25% for each foot over 30 feet of wall height.

**Example:** Story height = 50 feet: Multiplier = 1.050

**COMPLETION OF BUILDING VALUATION**

Contractors' overhead and profit, sales taxes, permit fees, and insurance during construction are included in the above costs. Interest on interim construction financing is also included, but not financing costs, real estate taxes, or broker's commissions.

Architects' fees are not included and should be added from Appendix C.

Depreciation suggestions are given in Appendix A.

County Multipliers which bring the basic costs up to date for each locality are found in Appendix D.