

Highlighting Guide for

Limited General Contractor

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Highlighting Guide for NASCLA General Contractor Books

Limited General Contractor

International Building Code
Carpentry & Building Construction
Modern Masonry
Contractor's Guide to Quality Concrete
OSHA 1926 Code of Federal Regulations
Roofing Construction & Estimating
Pipe & Excavation Contracting
Handling & Erection of Steel Joist & Girders

International Building Code

2018 Ed.		2021 Ed.		Topic or keyword(s) Bold in your Index
Section	Page	Section	Page	
110.3.4	8	110.3.1	1-8	frame <i>inspection</i> done after roof deck, fireblocking, & rough mech.
602.5	120	602.5	6-5	Construction Type I-V Chapter 6 covers all types.
706.11.1	130	705.11.1	7-9	Parapet, Exterior Wall , fire wall extend 30" above roof.
718.2.2	155	718.2.2	7-38	Concealed spacing fireblocking , horizontal spacing should be < 10'.
1010.1.7	271	1010.1.6	10-14	Doors , Thresholds @ doorways (sliding doors) $\frac{3}{4}$ " all others $\frac{1}{2}$ ".
1011.3	277	1011.3	10-22	Stairways , Headroom 80" or 6'-8" exception spiral stairway 78".
1015.2	283	1015.2	10-29	Guards , stairs (42" high) required platforms higher than 30".
1030.3	302	1031.3.3	10-51	Emergency Escape & Rescue , window wells height < 44".
Tbl 1106.1	308	1106.2	11-4	Accessibility , parking & passenger loading facilities.
1204.2	323	1204.2	12-4	Light, Required , natural - window glazing 8% of floor area.
1404.14.1	335	1404.14.1.3	14-8	Vinyl , Rigid - fasteners for vinyl siding 16" horizontal 12" vertical.
1505.1	343	1505	15-3	Fire Classification , Class A is the most fire-resistant roof
1507.2.2	345	1507.2.2	15-7	Roof Coverings , Asphalt Shingles, used on 2:12 or greater/4 fasteners per strip.
1507.18.4.2	355	1507.1.2	15-5	Ice dam - a self-adhering bitumen sheet (edge to 24" inside wall line).
1507.2.8.3	347	1507.2.8.2	15-8	Drip edge/@ eaves & gables, overlap 2" min., fastened every 12".
T1507.2.8.2	348	T1507.2.8.2	15-8	Flashing, Roof , Valley lining Galvanized steel, 0.0179", 26 gage - G90.
1507.3.6	348	1507.3.6	15-8	attachment - Galvanized fasteners are not attached to copper roofs.
1507.8.7	351	1507.8.7	15-12	Wood shingles & Shakes - side lap 1-1/2" side lap, spaced $\frac{1}{4}$ " to 3/8".
T1507.8.7	343	T1507.8.7	15-13	Wood shingles exposure & slope/16", No.2, 4:12 pitch, exposure 4".

2018 Ed.		2021 Ed.		Topic or keyword(s) Bold in your Index
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1511.5	359	1512.4	15-20	Roof Coverings reinstall of slate, clay, or concrete tile not damaged.
T1607.1	368	T1607.1	16-8	min. uniform & concentrated loads , live - residential, sleeping, 30 psf.
1804.4	431	1804		Excavation & Grading and Fill away from footing, 1:20 in 10'.
1805.2.2.1	421	1805.2.2.1	18-5	Dampproofing & Waterproofing - parged min. 3 8" below ground level.
T1807.1.6.3(1)	437	T1807.1.6.3(1)	18-9	Foundation Retaining walls /max. wall height 7', w/6' unbal. Fill, 10"
T1808.8.1	442	T1808.8.1	18-14	concrete strength of footing 2,500 psi @ 28 days.
1809.4	441	1809.4	18-15	Shallow Foundations depth of footings/12" below undisturbed ground.
1908.10.1	463	1908.8.1	19-5	frequency of testing, no field test if < 50 cubic yards of Shotcrete .
1907.1	450	1907.1	19-5	Concrete , Slab minimum provisions, 3.5" thick w/ 6 mil poly lapped 6".
1908.3 & 4.2	463	1908	19-5	Shotcrete , ¾" rock & #5 rebar.
2113.2	474	2113.2	21-9	Masonry , Chimneys 12" thick, & 6" beyond face of support wall.
2303.1.9.2.2	484	2303.1.9.2	23-2	Pressure-Treated Wood - maximum moisture content of 19%.
2304.12.1.1	499	2304.12.1.1	23-22	floor joist 18" from soil, & Girders , Wood Construction 12" from ground.
2308.3.1	508	230.3.1	23-32	Foundation , plates or sills - bolts ½" dia., embedded 7" into masonry.
T2308.4.2.1(1)	513	T2308.4.2.1(1)	23-37	Floor Construction, Wood , joist spans/16" o.c., southern pine #2, 2X8, 30# live, dead 10psf, 15'-7" span L/Δ =360.
T2308.7.1(1)	535	T2308.7.1(1)	23-59	Roof Construction , Wood, ceiling joist spans/16" o.c., southern pine #2 2" X 8" 10 # live, dead 5 #, 21'-7" span L/Δ =240.
2512.1.2	567	2512.1.2	25-5	Gypsum , Plaster, exterior weep screeds, min. 0.019" thick or 26 gage.
3306.2	608	3306.2	33-2	Pedestrian , protection at construction site min. 48" wide & support 150 psi

Here are a few questions from the International Building Code 2018 & 2021 editions with the answers using a **keyword**. Go to the index 1st for a keyword this will give you the section & chapter, then go to the table of contents with that chapter & section and get the page.

1. The building code allows you to cut or notch the ends of a 2" X 10" joist how many inches?

Hint: keyword may be **wall, wood construction** in the index with a subtitle **cutting, notching, boring**, that tells you it can be found in section 2308.5.9 to find what page section 2308 go to the table of contents in chapter 23 section 2308.5.9 page 520/23-44 gives (25% of 9.5" = 2-3/8") the answer desired 2-3/8". The trick is you must know nominal from actual dimensions! See carpentry book - page 1030 Standard sizes for framing lumber, nominal & dressed.

2. Is a stairway's **handrails** to code, if installed 42" above the leading edge of the treads? If not what is the maximum height? Page 283/10-28
3. The maximum slope of an **accessible ramp**? Page 280/10-12
4. What type of building that has wood columns & wood beams?
5. An ice dam membrane under asphalt shingled roof must extend at least how many inches inside the wall line?
6. What compressive strength concrete used to pour a basement foundation wall that is totally backfilled exposed to moderate weathering potential?
7. Rebar in concrete footings exposed to earth must have how much cover (inches)?
8. Using a single ply of 15# felt with asphalt shingles, what minimal slope is allowed by the building code?
9. What ASTM reference # is for structural steel?

Carpentry and Building Construction

Page	Topic in your Index
45	Dimension line
45-55	Sections, plan and elevations
63 & T418	Board feet calculations $CS=(HXW)/12 \times \text{Length}$ where H & W are inches
111	Measuring & layout Tools carpenter's level produces vertical & horizontal lines
245	Land elevation , If back-site to a benchmark of 125.5 is 4.5' and the foresite to a cut stake is 6'; How much cut should be marked on the stake if the bottom of the trench is 94'?
323	Wood, seasoning lumber , flooring shrink most in which direction? across the width.
353-359	Laminated-veneer lumber beams should never be notched
271	Beam pockets , moisture can swell wood beams clearance – 1/2"
461	Fireblocking required walls over – 10' high
550 & 714	Fireplace chimney flashing , crickets or saddle needed if chimney width over – 30"
577	Window types , casement, awning, hopper, & double-hung
605	Door & frames sizes for garages thickness – 2"
626	Roofing & Gutters, terms and concepts Head & Top Lap, exposure
639 & 901	Ridge vents Hip roof ventilation
796	Cabinets and countertops, installing cabinets the screw must penetrate into stud – 1"
908	Acoustical Insulation interior wall for sound
975	Acclimation wood flooring – 4 to 5 days

Modern Masonry

8 th ed	9 th ed	Keyword(s) Topic
17	38	Tools & equipment , saw blades, 1/8" silicon carbide or industrial diamond blade
	104	Weight and measures , 27 cf = 1 cy; 1 cf of water = 62.5 lbs.
91	123	Solid masonry units – 75% bearing surface is considered solid
92-97	124	Efflorescence white stain on masonry, stack bond – weakest
99	132	Mortar joints - concave or V joint most water resistant
125	160	Concrete masonry units , Two core block stronger than three core, use two core with rebar
133	169	Joint size for glass block layout table – ¼" joints
143	181	Sills are made from limestone because – no joints for water entrance
147-48	187	Mortar is made from Portland cement and what – hydrate lime ; What is slacking? – Use of lime - type S
151	189	Mixing mortar , use mortar within 2 ½ hours, mortar can also be retempered
153	187	Cement increases the strength of mortar, mortar properties
166	206	Types of ties – rectangular, Z and corrugated
181	181	Mortar consistency . What is furrowing? See figure 10-4
166	206	Tie placement reinforcement , how far from edge – 5/8" mortar cover from each edge
214	260	Most common wall cavity wall , space 2", cavity can be 1" up to 4"
220	265	Concrete masonry wall , Wide portion of CMU bed position up- allows more mortar bedding
226	274	Rake control joints depth – ¾"
267	279	Parging for dampproofing ; ½" thick two coats; extended above grade 6"
348	397	Reinforced concrete, types , WWM (welded wire reinforcement) should be lapped one stay plus 2"
485	518	Glossary, tuck pointing terms

Contractor's Guide to Quality Concrete

Note: This reference does not have an index; therefore, highlight keywords in the T.O.C.

3 rd ed	4 th ed	Keyword(s) Topics in your Table of Contents
13	11	Slump test – consistency
14	20	Air-content – for freezing weather
16	13	Concrete breaks in lab (7 days old) – 70% ultimate strength
18	17	Mixing water , water decreases concrete strength
20	19	High-Range Water Reducers Superplasterizer used in increase the slump without water addition
21	20	Air-entrainment Agents used for freeze-thaw
36	48	Mat, Raft, or Floating Foundation Poor soils for load bearing –use floating foundation
47	66	Form Material Double head nails, for pulling nails from concrete forms
52	70	Concrete weight – 150 pcf
68	126	Welded Wire Reinforcement Purpose of WWM hold down crack separation
72	100	Concrete cover for steel, see figure 6.11
75	128	Splicing Reinforcing Steel – 12”
88	121	Saw concrete – 1/4 thickness or min. 1” to create a weakened plane
123	176	Pumping concrete mixes, use river gravel as it is rounded
124	178	Vibration of concrete until air bubbles seen, segregation occurs when over vibrate
126		Surface Finishes , Sequence for concrete slabs - screed, float, trowled
127	181	Hot weather Placement – concrete strength is less
129	181	Never pour on frozen ground
133	179	Fresh Concrete , Prevention of concrete segregation, maximum slump 6”
139	199	Prevent surface scaling – add air entrainment

OSHA Code of Federal Regulations

Sect. 1903, 1904, 1910, & 1926.	Topic or Keyword(s) in your Index
1903.16	OSHA citations must be posted @ the jobsite within 3 days
1904.39	Reporting fatalities & multiple hospitalizations
1904.40	Providing records to gov't. representatives
1910.147	Lockout/Tagout – to prevent energizing of equipment
1926.102(a)3 & 102(a)5	corrective lenses Table E-1 eye & face protection
1926.104(d)	belt, not allow a fall greater than 6 feet; ½" min. dia.; 5,400 psi
1926.105(c)(1)	Safety net, extends out 8 feet working over water 25' below
1926.150 – Table F-1	Fire protection, types of fire extinguishers
1926.152 (b)(1)	Indoor storage flammable liquids 25 gallons
1926.200	Signs, signage colors
1926.300(d)(3)	Tools, circular saws shall have a constant pressure switch
1926.350(a)(10)	Oxygen and fuel manifolds separated – 20 feet 451(a) Scaffold, Safety Factor of 4 times its' intended load
1926.451(c)(ii)	Scaffold Restraints, (20' vertical & 30' for end of scaffold horizontal)
1926.550(a)(15)	minimum distance between the power line & the crane is 10 feet
1926.651(c)(2)	Means of access & egress from an excavation, in excavations over 4' deep & travel distance less than 25'
1926.652(b)	Appendix A to Subpart P, soils classification for excavations (Type A, B, & C) Appendix B to Subpart P, Tables used determine max. allowable slopes
1926.760c(3)	Roofing leading edge 90' X 90'

Roofing Construction and Estimating

Page	Keyword(s) Topic
24	Solid sheathing less than zero degrees; solid roof sheathing use 1" X 6"
35-36	Purpose for underlayment , waterproofing material, 6 items
43	underlayment, installation Figure 3-10; underlayment lap – 2" along edge & 4" @ ends
61	Ice damage precautions, Ice shield prevents ice dams; outside wall measure horiz. 2' inside
96	Flashing, chimney shingles turned into a vertical wall
106	Fasteners, asphalt shingles , Drive nails straight; prevents damage to shingle or felt
291	Built-Up Roofing , last for 20 years; use 3 gallons asphalt/square per layer
295	Roof relief vent ; figure 10-2 keeps moisture out of insulation
304	Bitumen, types Dead level – ¼ in 12; Flash point – 437 to 500 degrees Keep below 25
358	Ceilings , Figure 12-20 for adequate attic ventilation 1" air space between insulation and roof deck
362	Vapor barrier – condensation, will destroy the insulation
384	Leak repairs with roofing cement with sand granules
402	Attic Ventilation unconditioned space – controls moisture

Pipe and Excavation Contracting

2011 edition	Topic_or Keyword(s) bold in index
77	Bulldozer used for landscaping, use light weight dozer
79	Bulldozer , cut techniques - align toward the dump area
81	Bulldozer , Slot dozing - prevents materials from being sidecast
82	Bulldozer , angle blade, - can sidecast materials
84	Bulldozer, cycle time - average dozer speed under load is 2 mph
92	Scrapers , load time - used over long distances
113	Hub & reference stakes , station 1+00 equals 100 feet
116	Survey Back-site always subtract & Fore-site always add to the height of the instrument
146	A set , backhoe - volume of soil removed in 1 machine position
165	Track Backhoe , when to use - Best equipment digging > 8', use tracked backhoe
185	Nuclear density gauge , gamma radiation
228	Shoring systems , shoring jacks - used in firm soil
257	Contour interval , - closely spaced, indicates a steep slope
262	Irregular shape, area of - trenches, average end area
279	Rock , ripping - sedimentary rock easier to rip than other rock

Handling and Erection of Steel Joists and Girders

Pg.	Topic or Keyword(s)
4	Maximum & min. depths for webs for K series 8" to 30" in 2" increments. Bearing depth 2-1/2" (on 6" steel plate), & 4" on concrete or masonry. Length 8' to 60': example of a K-series 18K7 the 18 is depth & 7 is cord.
5	For LH series truss maximum & min. depths for webs for LH series 18" to 48" in 2" increments Bearing depth 5" (on 9" steel plate), & 6" on concrete or masonry. Length 21' to 96': example of a LH-series 40LH13 the 40 is depth & 13 is cord number.
5	For DLH series truss maximum & min. depths for webs for D LH series 52" to 72" in 2" increments. Bearing depth 4" (on 9" long steel plate), & 6" on concrete or masonry. Length 61' to 96': example of a LH-series 56DLH15 the 56 is depth @ mid-span & 15 is cord number.
5	For Joist Girder series truss maximum & min. depths for webs for JG series 20" to 120" in 2" increments. Bearing depth 7-1/2" on 9" long steel plate, & 6" on concrete masonry. Length 20' to 120': example of a LH-series 36G9N6K the 36 is depth & G indicates a girder & the 6K is 6 kips (kip= 1,000Lbs.) 9N = 9 joist spaces.
14	Lifting joists never by band, report any defects before transporter exits
21	Setting plans match tag end; joist girders must be erected singularly
23	Square-ended joist orientation 1 st web slopes down & away from end
29	Tack weld the ends of the joist before bridging goes in
35	Table, rows of bridging required before release
40	Typical bridging length – 20'; minimum lap for horizontal bridging 2"
64	Maximum weight of a bundle of bridging – 1,000 #
67	Function of camber – strength allows deflection. Normal camber for 60' long joist – 1 1/2"
Appendix B	
79	Joist welds must withstand a horizontal force of 700 pounds
80	use table 5.4-1 to determine the number of rows of bridging required for a 38' long joist with a # 8 cord member – 3 rows

When you are in the PSI exam center you only have three minutes per question or you will not finish the 80 question quiz. You must get 56 of the 80 correct to pass!

The exam is not hard; however if you are not disciplined you will struggle. I look forward to seeing you pass.