

**ARIZONA REGISTRAR OF CONTRACTORS**  
**A - GENERAL ENGINEERING (COMMERCIAL)**

**SCOPE OF WORK**

This classification allows the licensee to construct or repair fixed works, streets, roads, power and utility plants, dams, hydroelectric plants, sewage and waste disposal plants, bridges, tunnels, overpasses, and public parks. Also included are the scopes of work allowed by the A-4 through A-19 and CR-2 through CR-80 classifications. This classification does not include work authorized by the B-1, B-2, B or B-3 scopes.

Examination	# of Questions	Minimum Passing Score	Time Allowed
A General Engineering	109	70%	240 minutes

**CONTENT OUTLINE**

Subject Area	# of Items
Sewers and Septic Systems	10
Water Piping	5
Gas Piping	5
Paving	10
Excavation, Compaction, and Grading	12
Safety	10
Steel	3
Piles	5
Concrete	10
Traffic Control	6
Electrical Transmission Lines	4
Storm Water Runoff	9
Solar Thermal	10
Photovoltaic Systems	10

**REFERENCE LIST**

To find reference materials, you may use the link provided or search for the material online via a search engine such as Google. You may also go to PSI's online store at [www.psionlinestore.com](http://www.psionlinestore.com).

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge or general industry practices. **Except for Code books**, you can base your answers on later editions of references as they become available. For Code questions, the examinations will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

*The following reference material is allowed in the examination center:*

*Code of Federal Regulations - 29 CFR Part 1926 (OSHA)*, with latest available amendments, U.S. Government Printing Office, (866) 512-1800 or <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html>

OR

*Code of Federal Regulations - 29 CFR Part 1926 Selections by PSI*, with latest available amendments, 3210 E Tropicana, Las Vegas, NV 89121, (800) 733-9267, [www.psionlinestore.com](http://www.psionlinestore.com)

(See order form at the end of the Candidate Information Bulletin.)

*ASME B31.8 - Gas Transmission and Distribution Systems*, 2007 or 2014, American Society of Mechanical Engineers, 22 Law Drive, PO Box 2900, Fairfield NJ 07007, (800) 843-2763, [www.asme.org](http://www.asme.org)

*NFPA 30 - Flammable and Combustible Liquids Code*, 2015, National Fire Protection Association, 11 Tracey Avenue, Avon, MA 02322, (617) 770-3000, [www.nfpa.org](http://www.nfpa.org)

*NFPA 70: National Electrical Code*, 2017, National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02169-9101, (800) 344-3555, [www.nfpa.org](http://www.nfpa.org)

*On-site Wastewater Treatment Facility Provisions in Unified Water Quality Permit Rule, Arizona Administrative Code Title 18, Chapter 9*, 2006, Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, AZ 85007, [www.azdeq.gov](http://www.azdeq.gov)

*Uniform Solar Energy Code*, 2015, International Association of Plumbing and Mechanical Officials (IAPMO), (909) 472-4100, [www.iapmo.org](http://www.iapmo.org)

*The following reference material is not allowed in the examination center:*

*Photovoltaic Systems*, 2010 or 2012, James Dunlap, American Technical Publishers, Orland Park, IL 60467-5756, 800-323-3471, [www.go2atp.com](http://www.go2atp.com)

*Planning & Installing Solar Thermal Systems: A Guide for Installers, Architects, and Engineers*, 2<sup>nd</sup> edition, 2010, [www.irecusa.org](http://www.irecusa.org)

*Contractors Guide to Quality Concrete Construction*, 3rd Edition, 2005, ACI/ASCC, 38800 Country Club Drive, PO Box 9094, Farmington Hills, MI 48333, (248) 848-3700, [www.concrete.org](http://www.concrete.org)

*Placing Reinforcing Bars, Recommended Practices*, 2011, 9th Edition, Concrete Reinforcing Steel Institute, Distribution Center, 933 N. Plum Grove Road, Schaumburg, IL 60173, (847) 517-1200, [www.crsi.org](http://www.crsi.org)

*DIPRA Installation Guide for Ductile Iron Pipe*, 2000 or 2015, Ductile Iron Research Association, 245 Riverchase Parkway East, Suite O, Birmingham, AL 35244, (205) 4028700, [www.dipra.org](http://www.dipra.org)

*Pipe and Excavation Contracting*, Dave Roberts, 1987 or 2011, Craftsman Book Company, (800) 829-8123, [www.craftsmanbook.com](http://www.craftsmanbook.com)

*Pipe Welding Procedures*, Hoobasar Rampaul, 2003, Industrial Press, 200 Madison Ave., New York, NY 10016, (888) 528-7852, [www.industrialpress.com](http://www.industrialpress.com)

*Hot-Mix Asphalt Paving Handbook (MAPH-2)*, 2000, AASHTO, 444 North Capitol Street NW, Ste 249, Washington DC 20001, [bookstore.transportation.org](http://bookstore.transportation.org)

*Pipefitter's Handbook*, 1967, 3rd Edition, Forest R. Linsey, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016, (888) 528-7852, [new.industrialpress.com](http://new.industrialpress.com)

*Handling and Erection of Steel Joists and Joist Girders*, 1987, 2006, or 2008 edition, Steel Joist Institute, 234 W. Cheves



Street  
Florence, SC 29501, (843) 407-4091, [steeljoist.org](http://steeljoist.org)

*Instructional Manual for Training and Certification of Steel Personnel for Unbonded Post-Tensioning*, 2003, Post-Tensioning Institute. 38800 Country Club Drive, Farmington Hills, MI 48331, (248) 848-3180, [www.post-tensioning.org](http://www.post-tensioning.org)

*Concrete Pipe and Box Culvert Installation Manual*, 2007, American Concrete Pipe Association, 683 Grigsby Way, Cedar Hill, TX 75104, (972) 506-7216, ISBN: 960386825, [www.concretepipe.org](http://www.concretepipe.org)

*Lineman's and Cableman's Handbook*, Shoemaker and Mack, 12<sup>th</sup> or 13<sup>th</sup> Edition, McGraw Hill, [shop.mheducation.com](http://shop.mheducation.com)

*Manual on Uniform Traffic Control Devices for Streets and Highways*, 2003 or 2009, US Department of Transportation - Federal Highway Administration, (202) 366-0537, [www.fhwa.dot.gov](http://www.fhwa.dot.gov)

*Design and Construction of Urban Storm Water Management Systems*, 1992 American Society of Civil Engineers, [www.asce.org](http://www.asce.org)

*Storm Water Management for Construction Activities*, 1992, Environmental Protection Agency, (202) 272-0167, [www.epa.gov/npdes/pubs/owm0307.pdf](http://www.epa.gov/npdes/pubs/owm0307.pdf)

*Construction Handbook for Bridge Temporary Works*, 1995, 1st edition, American Association of State Highway Transportation Officials, 800-231-3475, [www.transportation.org](http://www.transportation.org)

*Construction Planning, Equipment, and Methods*, Robert L. Peurifoy, Clifford J. Schexnayder, Aviad Shapira, 2005 or 2010, McGraw Hill, [www.mhhe.com](http://www.mhhe.com)

*Soils and Foundations*, Cheng Liu and Jack B. Evett, 2008, 7th edition

*Arizona 811: Arizona Blue Stake, Inc.*, July 2010, 1-800-STAKEIT (782-5348), [www.arizona811.com](http://www.arizona811.com)

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, annotated and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing, highlighting, underlining and/or indexing in the references during the examination will be reported to the Arizona Registrar of Contractors. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. References may be tabbed/indexed with permanent tabs only. (permanent tabs are defined as tabs that would tear the page if removed). Temporary tabs, (defined as Post-It notes, or other tabs that may be removed without tearing the page) are not allowed and must be removed from the reference before the exam will begin. If you are downloading from the Internet, you may bring this reference into the testing center with you as long as it is bound. You can have it spiral bound or you may hole-punch it and put it in a binder.

