

**License Information**

**Scope-** Tests a candidate's knowledge of the installation, maintenance, repair, fabrication, alteration, and extension of air conditioning, refrigeration, piping vessels, warm air heating, low pressure boilers, ventilation systems, duct systems, insulation, and related appurtenances within a complete system unlimited in horsepower or tonnage.

**Examination Outline**

**Open Book**

**100 Questions – Four-hour time limit**

**75% Correct Required to Pass**

SUBJECT AREA	PERCENTAGE
HARV GENERAL	25
AIR CONDITIONING	20
HEATING – WARM AIR – LOW PRESSURE BOILERS	18
VENTILATION	15
CONTROLS	10
PIPING	8
INSULATION	4

**References**

*The following special device IS allowed in the testing center in addition to the standard allowable test center devices:*

*TRANE Ductulator*, TRANE Company, c/o Inland Marketing Services, 3030 Airport Road, La Crosse, WI, 54603.

*The following references ARE allowed in the testing center:*

*International Mechanical Code*, 2003 Edition, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795.

*International Fuel Gas Code*, 2003 Edition, International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795.

*Fibrous Glass Duct Construction Standards*, Fifth Edition, 2002, North American Insulation Manufacturers Association (NAIMA), 44 Canal Center Plaza, Suite 310, Alexandria, VA 22314.

*Carrier System Design Manual – Part III: Piping Design*, Carrier, 1960 Edition, Carrier Air Conditioning Company, Literature Distribution, Bldg. TR-2, Syracuse, NY 13221-4804.

*Pipefitters Handbook*, Third Edition, 1967, Industrial Press, Inc., 200 Madison Avenue, New York, NY 10016.

*The following references have been used to create exam questions but are NOT allowed in the testing center:*

*Low Pressure Boilers*, 2001 Edition, American Technical Publishers (ATP), 1155 West 175<sup>th</sup> Street, Homewood, IL 60430-4600.

*Refrigeration and Air Conditioning*, Third Edition, 1998, Prentice Hall/Pearson Education, Order Processing Center, P.O. Box 11071, Des Moines, IA 50336-0693.

*ASHRAE Handbook of Fundamentals*, I-P Edition, 2001, American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE), 1791 Tullie Circle, Atlanta, GA 30329.

*Modern Refrigeration and Air Conditioning*, Eighteenth Edition, 2004, Goodheart-Willcox Company, Inc., 18604 West Creek Drive, Tinley Park, IL 60477-6243.

*TRANE Air Conditioning Manual*, Revised Edition, 1996, TRANE Company, c/o Inland Marketing Services, 3030 Airport Road, La Crosse, WI, 54603.

*For information on how to obtain examination references, please call toll-free 877.624.2562.*

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