Four Pillars of Plumbing

Training Requirements for Plumbing Industries

Brazil 2017

Abu Dhabi – October 2017
Structure

- Plumbing industry context
- Standards & Regulation
- Training pathway
- Discussion
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Industry context

• Hydraulic Installer
  • Meaning of “plumbing and drainlaying”
  • No particular terminology used for different specialities
  • Works on building hydraulic installations
    • Project analysis
    • Standards attendance
    • Specific procedures
  • General services in water distribution are included
    • Cold and hot water
    • Draining systems
    • Heating systems
    • Not include cooling & ventilation systems
    • Fire protection systems
Industry context

• Gas Installer

• Meaning of “gasfitting”

• Different terminology used for each specialities
  • Gas distribution installer (tubing)
  • Appliances installer
  • Measurement systems

• Works on building gas installations
  • Project analysis
  • Standards attendance
  • Specific procedures and materials

• General services in gas distribution are included
  • Gas pipe & tubing distribution
  • Appliances (heaters, cookers)
  • Inspection
  • Connection with gas distributor company
Industry general context

• No mandatory training requirements for Plumbing services industry

• No mandatory certification scheme

• Building Construction Industry is more involved with training programes (SENAI)
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Standards in Brazil

International (ISO/IEC)

Regional (CEN/AMN/Copant)

National (ABNT, DIN, BSI, AFNOR, ANSI)

Organizational
Standards – Water Installations

• ABNT NBR 5626 – Building cold water project and construction
• ABNT NBR 7198 – Building hot water project and construction
• ABNT NBR 8160 – Building draining systems project and construction
• ABNT NBR 10897 – Fire protection using sprinklers
• ABNT NBR 10844 – Building rain draining project and construction
• ABNT NBR 13714 – Fire protection using hydrants

• ABNT NBR 15932 – Competence requirements for hydraulic installer
Standards – Gas Installations

• ABNT NBR 15526 – Building gas distribution project and construction
• ABNT NBR 13103 – Building gas appliances installation

• ABNT NBR 15902 – Competence requirements for gas appliances installer
• ABNT NBR 15903 – Competence requirements for building gas distribution system installer
• ABNT NBR 15904 – Competence requirements for building measurement installer
• ABNT NBR 16216 – Competence requirements for gas systems inspector (assessment)
• ABNT NBR 16302 – Competence requirements for polyethylene solder
Competence Regulations

- INMETRO Portaria 010 – 04 January 2011
  - Voluntary system for competence in Building Construction Sector
    - Gas appliances installer
    - Gas distribution system installer
    - Gas measurement systems installer

- INMETRO Portaria 483 – 01 October 2015
  - Voluntary system for competence in Building Construction Sector (update)
    - Hydraulic systems installer
    - Gas inspector
    - PE solder
Market Regulations

• ABRINSTAL Qualinstal Programme

• Voluntary conformity assessment scheme for Building Construction Sector
  • Hydraulic building systems
  • Gas building systems
  • Fire protection building systems

• Includes evaluation of: project, products, competence, management and technical capacity of the company responsible for building installations
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Training structure

• Hydraulic Installer

  • Federal law 9394/1996 – directives for national education
  • Federal law 5154/04 – drivers for law 9394 implementation
  • Federal law 11741/08 – directives for professional education

• Hydraulic installer 160h

• Hydraulic professional installer 800h
  • Basic module (400h)
  • Final module (400h)
Training structure

- Gas Installer

- Federal law 9394/1996 – directives for national education
- Federal law 5154/04 – drivers for law 9394 implementation
- Federal law 11741/08 – directiver for profissional education

- Gas appliances installer 200h
- Gas distribution system installer 160h
- Gas inspector 60h (up)
- PE solder 60h
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Strategic pillars in Brazil

• Design

• Products

• Labor (human resources)

• Plumbers (companies)

• Instalations (assessment)
Partners & Sponsors

- Abrinstal
- Sindinstalação
- Sabesp
- Abramat
- Deca
- Tigre
- Amanco
- Docol
- Eluma
- Tupy
- Apolo
- Saint-Gobain

- Esteves
- Genebre
- Emetti
- Lorenzetti
- Bosch
- Hansgrohe
- Grohe Dawn
- Geberit
- Comap
- CBCS
- USP IEE
Discussions / Suggestions