

PLUMBING WORK PROCESSES

Work Processes Description:	Approximate Hours:
A. Care and Use of Tools/Material/Safety	550
<ul style="list-style-type: none">• Identifying materials, fittings, grades, and types of pipe• Use and operation of trade tools• Maintaining tools and equipment• Identifying and installing hangers, supports, cans, and inserts• Conducting proper trenching, saw-cutting, and core-drilling operations	
B. Preparation of Tools/Materials	450
<ul style="list-style-type: none">• Selecting cast iron, galvanized and other types of piping for roughing in and finish work• Loading required material and equipment• Unloading at job site, using safety precautions and care not damaging equipment and material• Rigging of all tools, equipment, and materials for safe lifting operations	
C. Drainage Piping and Fittings	950
<ul style="list-style-type: none">• Determining types of piping used underground and above grade within a building• Installing cast iron, ABS (Acrylonitrile-Butadiene-Styrene), steel or terra cotta piping• Maintaining proper grade, using approved drainage fittings as required by code• Sizing drainage system using the Uniform Plumbing Code, Chapter 7; Tables 7-3 & 7-5• Design and layout of drainage systems to include canning, trenching, material take-off, inserts, hangers, core drilling, saw cutting, and shop pre-fabrication• Installation of site drainage (sanitary & storm) to include catch basins and manholes.• Installation of standard waste systems within building (Commercial & Residential)• Installation of special waste systems to include any or all acid resistive waste piping• Installation of any or all strapping, backing, hangers, carriers, seismic devices, and any or all support mechanisms as required by drainage piping installations• Removing or rehabilitating of drainage piping to remain and avoid contamination of existing structure and environment	
D. Venting	750
<ul style="list-style-type: none">• Learning the application and importance of venting• Installing main and branch venting, loop venting, wet venting, and re-venting in accordance with the UPC• Determine proper grade above/below the flood rim of fixtures• Installation of any or all backing, strapping, hangers, carriers, seismic devices, and any or all support mechanisms as required by vent-piping installation• Removing or rehabilitating vent-piping systems in a clean, safe, and sanitary manner while protecting piping to remain and avoiding contamination of existing structure and environment.• Design and layout of venting systems to include canning, trenching, material, take-off, inserts, hangers, core drilling, saw cutting, and shop pre-fabrication	
E. Pipe Cutting, Reaming, and Flanging of Gas Systems	910
<ul style="list-style-type: none">• Lay-out and diagram Low and Medium pressure gas systems• Setup and proper operation of gas threading machines• Using hand cutters and reamers• Using taps and dies• Operating power drills• Welding, Soldering, Brazing, and oxy-acetylene torch use for all work related to the piping trade• Design and layout of gas piping systems to include canning, sleeving, trenching, material take-off, inserts, hangers, core drilling, saw cutting, and shop pre-fabrication• Installation of any or all building gas or utility gas systems using any or all approved gas piping materials and techniques• Installation of any or all strapping, backing, hangers, seismic devices, and any or all support mechanisms as required by gas piping system installation• Installation of space heating equipment, gas fired equipment, gas appliances, wet or dry heating system equipment, solar equipment, and controls including maintenance, repair, rehabilitation, and demolition of plumbing and piping systems• Removing and or rehabilitating gas systems in a clean and safe manner while protecting piping to remain and in strict accordance with "Flammable Gas" handling procedures	
F. Domestic Water Systems	950
<ul style="list-style-type: none">• Lay-out and diagram portable water systems• Installing copper piping systems (types K, L, and M)• Sweating copper fittings, brass valves and dielectric unions• Proper support of domestic water systems• Installing approved Aquapex water systems• Design and lay-out of domestic water systems to include sizing, canning, trenching, material take-off, inserts, hangers, core drilling, saw cutting, and shop pre-fabrication	

- Installation of hot & cold water, solar piping, site utility piping, pool supply piping, fountain supply piping, spa supply piping, and any or all portable water piping/connections to equipment and appliances using any or all acceptable materials, techniques, and cross connection prevention procedures
- Installation of any or all strapping, backing, hangers, seismic devices, and any or all support mechanisms as required by domestic water piping and equipment installations
- Removing and or rehabilitating domestic water systems in a clean, sanitary, and safe manner while protecting piping to remain and prohibiting contamination of existing domestic water piping
- Welding, soldering, and brazing of all work related to the piping trade

G. Testing Plumbing Systems 750

- Testing Drain, Waste, and Vent (DWV) systems
- Testing Medium and Low pressure gas systems
- Testing domestic water systems
- Any or all accepted methods of testing sanitary sewer, storm drain, DWV systems, fuel gas piping, water distribution, mechanical piping, solar piping, and any or all piping systems related to the piping trade new or existing
- Repair or rehabilitation of tested systems in a clean, sanitary, and safe manner as required by test procedures and results

H. Fixture/Appliance Installation 740

- Installing water heaters, gas and electric
- Installing plumbing fixtures – water closets, lavatories, showers, tubs, sinks, and any or all commercial, residential, institutional, or industrial fixtures, equipment or trim affiliated with the finish phase of any or all plumbing projects
- Any or all fuel gas and or condensate drain connections to any or all HVAC equipment
- Installing of fuel piping as it pertains to water heaters only
- Installation of any or all accepted "Backflow Prevention" devices, meters, regulators, and any or all accepted devices required by a complete and total plumbing systems
- Installation, fabrication, rehabilitation, and demolition of air, solar, vacuum, chemical, rainwater utility piping as required by new or retrofit fixture and or appliance installation
- Installation of any or all space heating equipment, gas fired equipment, gas appliances, wet or dry heating system equipment, solar equipment, and controls including maintenance, repair, rehabilitation, and demolition of plumbing and piping systems as required
- Installation of any or all backing, strapping, hangers, seismic devices, and any or all support mechanisms as required by the installation of any or all fixtures, appliances, or equipment
- Installation of any or all "site fabricated" shower pans, roof drains and overflows, and all plumbing related flashings
- Rehabilitation, demolition, alteration, and modification of existing piping and plumbing as it pertains to the installation of fixtures, equipment, and or appliances

I. Service/Maintenance 500

- Repairing and replacing components
- Cutting and patching walls
- Start-up and testing appliances and fixtures
- Repair damaged or leaking piping
- Assembly, installation, service, and repair of pipes, fitting, and fixtures for gas, water, sanitary lines, storm drains, toilets, sinks, basins, boilers, heat exchangers, valves, pumps, drinking fountains, water stills, hot water heaters, solar heating systems, pools, fountains, spas, air, chemical, solar, vacuum systems and all other trade related systems and equipment
- Cutting, bending, threading, joining, and connecting of all pipes and other trade related materials
- Performance of maintenance on plumbing equipment and fixtures, repair of pipes including clearance of clogged sewers, drains, waste, and vent lines
- Detection, evaluation, and repair of plumbing system malfunctions
- Service, maintenance, repair, demolition, and replacement of pipes and piping affiliated with any or all trade related systems
- Installation, maintenance, repair, or replacement of any or all gas lines, gas appliances, gas fired equipment and all related controls and or equipment
- Any or all soldering, welding, and brazing related to the plumbing/piping trade
- Any or all core drilling and or saw cutting and restoration to original condition

J. Industrial/Commercial Piping 650

- Design, size, and lay-out industrial/commercial piping systems to include canning, trenching, material take-off, hangers, core drilling, saw cutting, and shop pre-fabrication as it may apply to any or all piping/plumbing systems encountered in an industrial/commercial environment
- both on-site and within the structure
- Installation of any or all accepted plumbing/piping fittings, fixtures, equipment, materials, controls, hardware, hangers, supports, seismic devices, appliances, and any or all related materials encountered in any or all industrial/commercial structures, projects, and or environments
- Pipe fit-up and welding as it pertains to any or all piping/plumbing trade related work
- Fabricate/install high-pressure air and hydraulic systems
- Install grease and special waste systems
- Install direct and indirect waste piping systems
- Install commercial kitchen/food service piping, plumbing, and equipment
- Install rainwater and overflow piping both on-site and within structure

TOTAL HOURS

7200