



# Blueprint for Partnership

## The IPA-IAPMO Plumbing Education Program (Part - 2)

*This is Part Two in a series of articles about the process being undertaken to produce effective plumbing training, education, and certification based on the IAPMO-INDIA Plumbing Code. The program will be implemented throughout India via a partnership between the IPA, IAPMO, and the IIP (Indian Institute of Plumbing).*

*The goal of this series of articles is not only to describe the essential steps that need to be taken to produce a program of such magnitude, but also to share our knowledge and expertise. We believe that sharing our preparedness for achieving success and meeting high expectations is necessary to gain the confidence of all who will be served by the program.*



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### Plumbing Job Domain/Task Analysis

As training and education professionals, we must rely upon subject matter experts to provide the research information we need in order to be able to design and develop a program of study that will teach the right things... at the right times...to the right students. This is why we are beginning with a program design methodology which begins with a **Job Domain Analysis**.

The purpose of conducting a job analysis for this program is to determine the jobs and positions that will serve the plumbing industry in India. It will produce a detailed examination of the (1) functions, duties, and tasks that make up a job, (2) conditions under which they are performed, and (3) the knowledge, skills, abilities, attitudes, and the physical condition of the employees that are vital to accomplish the minimum standard of performance required for each position.

The completed analysis will allow us to identify the tasks performed by target groups in the plumbing occupations and to develop instruments for use in the preparation of curricula for training and the criteria for the certification of individuals.

To facilitate the job analysis, a task analysis worksheet was created. Subject matter experts will complete the worksheet by reviewing and revising it to reflect a comprehensive view of the Indian plumbing industry. Once the task analysis is complete, tasks will be clustered according to target groups. Some tasks will apply to all groups, while others will be group-specific. We will then create comprehensive task lists for each target group listed below:

#### Target Groups:

- Plumbing Engineers/Contractors
- Project Managers/Foremen/Managers
- Apprenticeship Plumbers
- Task-trained Laborers

The analysis worksheet is structured as follows:

**BLOCK** – Reflects a distinct operation relevant to the occupation.

**TASK** – Distinct activity that, combined with others, makes up the logical and necessary steps the worker is required to perform to complete a specific assignment within a “BLOCK”.

**SUB-TASK** – The smallest division into which it is practical to subdivide any work activity and, combined with others, fully describes all duties constituting a “TASK”.

Below is a sample excerpt from the Task Analysis Worksheet.



**BLOCK A  
COMMON OCCUPATIONAL SKILLS**

*Trends: Higher demand for computer literacy. Increased demand for demonstrating adaptability and resourcefulness. Increased frequency of estimating, drawing, communicating and material ordering. Greater use of information and communication technologies. The speed of communication has created a need for fast services. Increased demand for a solid foundation in basic skills. Improved efficiency due to the use of new tools and new technologies for installation and maintaining of plumbing system.*

TASK 4: INSTALLS SUPPORT SYSTEMS. <b>Related Components:</b> Hangers, brackets, supports, plans and specifications, national and local codes, rods, backing, anchors, guides/slide plates, vibration isolation, seismic restraints, structural integrity <b>Tools and Equipment:</b> Hand tools, portable power tools, assorted equipment, hoisting and rigging tools and equipment, protective equipment, cutting and joining equipment	Identify Target Groups				Identify Omissions, Inaccuracies, and Not Applicable Tasks		
	Plumbing Engineer/Contractor	Project Manager/Foreman/Manager	Apprenticeship Plumber	Task-Trained Laborer	Missing Tasks	Incorrect Task Statement	Task N/A
<b>Sub-task</b>							
<b>4.01 Selects systems.</b>			X	X	X		
4.01.01 knowledge of codes and regulations			X	X			
4.01.02 knowledge of hangers and support systems			X	X			
<i>Knowledge of manufacturers' specifications</i>			X	X			
4.01.03 ability to select hangers, support systems and materials							X
<b>Sub-task</b>							
<b>4.02 Prepares support systems.</b>			X	X			
4.02.01 knowledge of hangers, support systems and materials			X	X			
4.02.02 ability to prepare hangers and support systems			X	X			
<b>Sub-task</b>							
<b>4.03 Installs support systems.</b>			X	X			
4.03.01 knowledge of manufacturers' requirements			X	X			
4.03.02 knowledge of hanger and support systems			X	X			
4.03.03 ability to fabricate hangers and supports			X	X			
4.03.04 ability to install hangers and supports			X	X			

The best task analysis documentation is that which has collected data from as many individuals in as many jobs and levels as possible within an industry. To accomplish this, we are making available the worksheet to the industry professionals who read this periodical. By sharing your expertise and experience, you can contribute to the success of this program. The Task Analysis worksheet is available for download from the IAPMO-INDIA website i.e. <http://www.iapmoindia.org>.