

Applications of Plastic Pipes in the Plumbing Industry



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A one-day course on “Applications of Plastic Pipes in the Plumbing Industry” was organised by IEM in collaboration with Azeeta Pipe System Sdn Bhd. Held on 22 March 2011 in conjunction with Engineering Week, the course attracted 17 participants from the plumbing industry. The course also included a tour of the manufacturing process of ABS pipes.

It has often been said that Malaysia has “First Class Infrastructure, Third Class Maintenance”. However, this statement was challenged by Ir. Gary Lim from the perspective of the plumbing industry. He insisted that this statement is only true when it has been ascertained that the design, installation and commissioning of the plumbing works have been carried out correctly by a competent engineer.

In his talk, Ir. Lim touched on the Fundamentals of Fluid Laws covering the Continuity Equation and Bernoulli’s Theorem, both of which are essential in sizing the pump and pipe size. To determine the frictional loss of pipe, he advocated the use of the Hazen William formula instead of the Thomas Box formula which assumes an “f” value of 0.007.

A list of all plastic pipes used in plumbing was compiled with the corresponding MS colour. Hence, participants can now identify the different type of plastics used at project sites with ease.


Also presented was a case study which compared the frictional loss of the various types of pipes including metal pipes. Some of the participants were surprised with the significant differences among the different types of pipes. Water hammer in the pipeline is a key problem in many plumbing installations and could be addressed at the design stage in various ways such as by using a bigger pipe size, variable speed drive, surge tanks, or water hammer arrestor or by slow closing of valves to minimise the impact.

The afternoon session conducted by Engr. Ung touched on actual site problems with regards to installation. Various photographs were shown to highlight the various shortcomings of installations found in the industry which could cause pipes to burst or crack. This could result in property damage even during the project liability period. However, many might mistakenly blame the defect on poor maintenance. A properly designed plastic piping system operating within its parameters is said to be able to last for 50 years.

The participants then toured the manufacturing plant and were shown the various quality assurance steps taken at various stages to ensure the finished pipe complies with the MS 1419 Specifications and Installation Guides of ABS Pressure Piping System.


A number of the participants attempted the joining of ABS pipes using solvent cement and was amazed that the joint could withstand the impact and a hydrostatic test pressure as high as 48 bars.

The course was indeed a very informative one for the participants. Thanks to the detailed information provided by Azeeta Pipe System, the course participants now have a better understanding of plastic piping systems used in the plumbing industry. ■






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