

19th - 22nd April 2004 Plastics Pipes XII Conference, Milan Italy

Abstract

Welding of large diameter heavy wall polyolefine pipes and long term performance

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In future polyolefine pipes will be needed in large diameter and heavy wall as an alternative to concrete and steel.

Various welding techniques, standards and guidelines available on the international market for butt fusion of HDPE and PP pipes (e.g. DVS, WIS, NIL, ASTM and Japanese) and long term performance requirements are compared.

Test studies on welding quality (long and short term) made on large diameter heavy wall polyethylene pipes are presented taking into account the influence of raw material quality and wall thickness.

Both practical performance experience with installation of heavy wall large diameter pipes and the method to determine the expected lifetime of the pipeline show the superiority of polyolefine pipes to other pipe materials.



Example:

Butt welded HDPE pipe (OD 710 mm; SDR 13.6; PE 100) in Misato city in Saitama prefecture, Japan, in a water distribution system with the readjustment of town lots.