35－43 METAL PIPE FORMING USING UNDERWATER SHOCK WAVE

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In this paper, we present the new method that free metal pipe forming using underwater shock wave generated by underwater explosion of explosive. This method does not use the metal die and is an epoch-making process.

Therefore, we did some experiments of copper pipe forming using detonating cord into water. We considered some conditions of changing the distance between the explosive and copper pipe, filling inside of copper pipe, both ends of it and so on. Some results indicated the effect to deformation of copper pipe. The set up condition of the largest deformation of copper pipe was No.4. In case that filling inside of copper pipe was water, it was not almost deformed.

And then, the numerical simulation have done. The simulation model picked in this paper was ashamed model. However, that result indicated a tendency to experimental result in deforming process of the copper pipe.

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