

As shown in Figure 9, under each explosive dose of TNT, comparison of peak pressure between 0.5 m and 1 m container model was chosen as example. According to the comparison of the peak value of shockwave in different water area, we could know whether the size of the container had a certain effect on the shockwave, we know that whether it was TNT or RDX, in the model of 0.5 m water area, the pressure peak value of the shockwave was smaller than that of the value in the water area of 1 m. Therefore, the change of container size will affect the peak pressure of shockwave, but the extent of the impact will not be great.

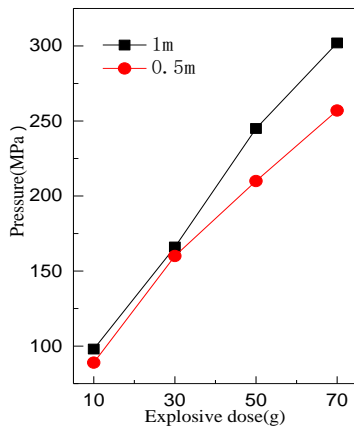


Figure 9. Shockwave pressure value in 1 m and 0.5 m containers

7. CONCLUSIONS

Shockwave will quickly decay to the initial static pressure within a relatively short time (0.5 ms) and a short distance (0.2 m) in the water area. The larger the explosive dose, the greater the attenuation of the shockwave will be.

When the simulation grid meshed into relatively small sizes, the simulation values of the shockwave will be relatively higher than the empirical values at the same distance, and the accuracy will also be higher, but the computation will increase exponentially; Compared with 2.5 mm and 4 mm, the error of 2 mm meshing was relatively smaller, the calculation quantity and precision were better; And, the 1 mm meshing had the case of excessive accumulation of error energy, so 2 mm was the best.

Comparing the upper end point of Y axis initiation with the central initiation, the initial pressure of the shockwave will be different. The shockwave pressure value of the central initiation was smaller than that of the upper end point of Y axis initiation.

The initial shockwave peak value of the radius of 0.5 m sized model was about 10 MPa smaller than that of the 1 m sized model, but with respect to the explosive energy level of TNT and RDX, the influence can be ignored. The shockwave

attenuation degrees of the two models were the same. Within the same time, incident wave and reflected wave superposition of the 0.5 m container model is more than that of the 1 m model.

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