

Cooling of Weapons with Graphite Foam

Disclosure Number

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Technology Summary

A graphite foam that was partially densified with a second material was wrapped around the barrels of weapons. It is evident that by placing a graphite foam wrap densified with a second material around the barrels, the temperature of the barrels can be reduced. This was both modeled and demonstrated on a real weapon. It was shown that the strengths can be increased by more than an order of magnitude over the raw commercial foams. There is significant evidence that through further modeling and optimization that a fully operational foam wrap can be developed that results in a barrel with drastically reduced temperatures during operation. Perhaps, if the barrel wraps can be optimized, the combat load of the soldier can be reduced by eliminating the need to carry extra barrels. In addition, the life and reliability of the barrels can be extended reducing life cycle costs to the soldier platform.

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