

**Shevchuk, V. A.**

**Calculation of thermal state of bodies with multilayer coatings.** (English) [Zbl 1302.74054](#)

Sloot, Peter M.A. (ed.) et al., Computational science - ICCS 2002. 2nd international conference, Amsterdam, the Netherlands, April. 21–24, 2002. Proceedings. Part 2. Berlin: Springer (ISBN 3-540-43593-X). Lect. Notes Comput. Sci. 2330, 500-509 (2002).

Summary: The procedure for the calculation of heat conduction process in constructions elements with thin protective multilayer coatings is elaborated. This procedure is based on the essential simplification of solving the initial problem for constructions elements with thin multilayer coatings, and is connected with the modeling of such coatings by thin shells with appropriate geometrical and thermal properties of a coating. In such an approach, the influence of thin coatings on the course of heat processes in a body-coating system is described by special generalized boundary conditions. The efficiency of this approach has been shown by the comparison of results obtained according to this approximate approach with an accurate solution for the test case of an  $n$ -layer plate.

For the entire collection see [\[Zbl 0988.68769\]](#).

**MSC:**

[74F05](#) Thermal effects in solid mechanics

[74S30](#) Other numerical methods in solid mechanics (MSC2010)

Cited in **2** Documents

**Full Text:** [Link](#)