

# 《土木工程专业英语》

## 图书基本信息

书名：《土木工程专业英语》

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## 前言

专业英语是大学英语教学的一个重要部分，是必修课程。根据教育部大学英语教学大纲的规定和近年来对大学生专业英语阅读的新要求，结合编者多年来的教学实践，在参考现有土木工程专业英语教材的基础上，编写了本教材。本书以提高土木工程专业学生的专业英语阅读能力为出发点，介绍了专业英语的阅读技巧和翻译方法，通过课文材料的阅读，可扩展学生的专业知识视野。本书的特点是：

- 选材内容新颖。课文材料多来自较新的专业杂志和网络文章，较好地介绍了当今土木工程领域相关的新技术和新成果。
- 选材内容涉及面广。课文选材涉及土木工程总论，工程结构与施工，岩土与基础工程，道路、桥梁与隧道工程，土木工程防灾与减灾，建筑材料及计算机在土木工程中的应用等，有助于学生全面了解土木工程专业。
- 课文编排重点突出。每单元课文内容分重点讲解和一般阅读两部分，前面部分为重点讲解内容，后面部分可供有潜力的学生阅读。
- 教材适应性广。教材课文难度、深浅不等，可以适用于不同英语水平的学生，满足不同的教学目的和要求。
- 强调学生能力的培养。使用本书不仅可以获得更广泛的土木工程专业知识，而且可以了解专业英语阅读的特点、专业英语正确的阅读技巧和翻译方法，从而提高专业英语的阅读和翻译水平。
- 适应专业英语教学的新要求。近年来，各高校对学生的英语水平提出了新的要求，要求学生在完成毕业设计（论文）的同时，还必须完成一定篇幅的文章的英汉翻译，并要求写出毕业设计（论文）的英文摘要。本书充分考虑了这一点，设计了相应的练习和知识讲解。

本书由西安科技大学戴俊教授和河南工业大学刘存中副教授主编。编写分工为：戴俊编写第1、2、8-11、14、15、36单元，刘存中编写第3-7、22、25单元，北京建工学院董军编写第12、13、29-31单元，河南理工大学梁为民、王新生编写16-19单元，河南工业大学刘起霞编写第23、24、32、33单元，河南工业大学李作正编写第20、21单元，西安科技大学熊光红编写第26-28单元，西安科技大学奚家米编写第34、35单元。每单元后面的补充知识均由戴俊编写。

西安建筑科技大学薛建阳教授对本书进行了全面审阅，就内容的取舍和编排提出了许多宝贵的意见，对有关术语进行了核对，为本书增色不少，在此深表感谢。

由于时间仓促，加之编者水平有限，书中不当、错漏之处在所难免，恳请读者批评指正。



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## 书籍目录

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## 章节摘录

### Reading Material Effect of High Temperature or Fire on Heavy Weight Concrete Properties

Temperature plays an important role in the use of concrete for shielding nuclear reactors. In the present work, the effect of different durations ( 1 , 2 and 3h ) of high temperatures ( 250 , 500 , 750 and 950C ) on the physical , mechanical and radiation properties of heavy concrete was studied. The effect of fire fitting systems on concrete properties was investigated. Results showed that ilmenite concrete had the highest density , modulus of elasticity and lowest absorption percent , and it had also higher values of compressive , tensile , bending and bonding strengths than gravel or baryte concrete. Ilmenite concrete showed the highest attenuation of transmitted gamma rays. Firing ( heating ) exposure time was inversely proportional to mechanical properties of all types of concrete. Ilmenite concrete was more resistant to elevated temperature. Foam or air proved to be better than water as a cooling system in concrete structure exposed to high temperature because water leads to a big damage in concrete properties. During the last few years , analytical and computation methods have been greatly developed in the field of concrete building exposed to high temperature or accidental fire. The transient heat flow within a fire-exposed structure is governed by the heat balance equation. At elevated high temperature or accidental fire , concrete surfaces exposed to heat are significantly affected. At free surfaces , the heat flow is caused by convection and radiation. A preliminary evaluation of the failure criteria showed that failure of heated concrete surface occurs most likely by crack formation parallel to the hot surface , degradation of concrete strength and pressurization of concrete pores. ....

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