

CHAPTER 17

Fundamentals of Metal Forming

Review Questions

1. Plasticity is the ability of a solid to flow, plastically deform, without deterioration of its properties. The mathematical description of plastic deformation stresses and strains, and the relations between them is known as the theory of plasticity.
2. Deformation processes shape metal in the solid state through the rearrangement rather than the removal of material. Unfortunately, large forces are required, and the machinery and tooling can be quite expensive. Large quantities may be necessary to justify the capital expenditure.
3. Large production quantities are often necessary to justify the use of metal deformation processes because the large forces require costly machinery and tooling.
4. Independent variables are those aspects of a process over which the engineer has direct control. They are generally selected or specified when setting up the process.
5. The specification of tool and die geometry is an area of major significance in process design. Since the tooling will produce and control the metal flow, the very success or failure of a process often depends upon good tool geometry.
6. It is not uncommon for friction to account for more than

Chapter 17 Fundamentals Of Metal Forming

Ralph A. Burns



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to material behavior and selection measurement and inspection machining fabrication molding fastening and other important processes using plastics ceramics composites and ferrous and nonferrous metals and alloys This extensive overview of the field gives students a solid foundation for advanced study in any area of engineering manufacturing and technology

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Fundamentals of Modern Manufacturing Mikell P. Groover, 1996 Covers engineering materials production systems and manufacturing processes emphasizing manufacturing science and quantitative analysis of manufacturing processes with even treatment of materials beyond an emphasis on metals Chapters on materials identify the principle manufacturing processes for the given material while processing chapters on **Technical Digest**, 1997 *Fundamentals of Analytical Chemistry* Douglas A. Skoog, 2004 This text is known for its readability combined with a systematic rigorous approach Extensive coverage of the principles and practices of quantitative chemistry ensures suitability for chemistry majors

Metal Progress, 1984 **Metallurgy Fundamentals** Daniel A. Brandt, Jarius C. Warner, 2005 Metallurgy Fundamentals provides the student with instruction on the basic properties characteristic and production of the major metal families Clear concise language and numerous illustrations make this an easy to understand text for an introductory course

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