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Nota di contenuto	Part I. Introduction: 1. Introductory survey -- 2. Evolving applications of plastics -- Part II. Mechanics: 3. Introduction to stress and deformation -- 4. Models for solid materials -- 5. Simple structural elements -- 6. Models for liquids -- 7. Linear viscoelasticity -- 8. Stiffening mechanisms -- Part III. Materials: 9. Introduction to polymers -- 10. Concepts from polymer physics -- 11. Structure, properties, and applications of plastics -- 12. Blends and alloys -- 13. Thermoset materials -- 14. Polymer viscoelasticity -- 15. Mechanical behavior of plastics -- Part IV. Part pocessing and assembly: 16. Classification of part shaping methods -- 17. Injection molding and its variants -- 18. Dimensional stability and residual stresses -- 19. Alternatives to injection molding -- 20. Fabrication methods for thermosets -- 21. Joining of plastics -- Part V. Material systems: 22. Fiber-filled materials : materials with microstructure -- 23. Structural foams : material with millistructure -- 24. Random glass mat composites : material with macrostructure -- 25. Advanced composites : materials with well-defined reinforcement architectures.
Sommario/riassunto	"With the exception of advanced composites, mainly used in aerospace and defense applications, until recently plastics were not considered engineering materials. Now plastics have become important for several

reasons. First, their cost-effective use has been demonstrated in demanding automotive structural applications. An important example is the all-plastic bumper used in the 1984 Ford Escort, which was capable of withstanding an 8 kmph (5 mph) barrier impact"--