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Nota di contenuto	Introduction -- Line Loading of an Elastic Half-Space -- Frictionless Normal Contact Without Adhesion -- Normal Contact Without Slip -- Normal Contact with Adhesion -- Tangential Contact -- Rolling Contact -- Wear -- Transversally Isotropic Problems -- Viscoelastic Contact Problems -- Contacts of Functionally Graded Materials.
Sommario/riassunto	The book contains a structured collection of complete solutions to all relevant plane contact problems. Classic profiles – such as the cylinder, the wedge, or the rectangular flat punch – are considered under centric and eccentric loading, but also a variety of other technically relevant shapes, such as the flat punch with rounded edges, the wedge with rounded tip, or wavy surfaces. With regard to the load configuration, adhesive and non-adhesive normal contacts, tangential contacts, and rolling contacts are considered. The materials considered are elastic

isotropic, transversally isotropic, viscoelastic, and functionally graded media. The solutions given are derived in the simplest way available, and, in addition to the macroscopic relationships between load and contact configuration, include the stress fields in the surface and, where applicable, within the contacting bodies. Content Introduction – Line Loading of an Elastic Half-Space – Frictionless Normal Contact Without Adhesion – Normal Contact Without Slip – Normal Contact with Adhesion – Tangential Contact – Rolling Contact – Wear – Transversally Isotropic Problems – Viscoelastic Contact Problems – Contacts of Functionally Graded Materials The target audiences The book is geared towards engineers working in e.g. mechanical engineering, the tire industry, the automotive industry, or polymer and elastomer manufacturers. It also serves as a reference work for research and teaching. The authors Prof. Dr. rer. nat. Valentin L. Popov studied physics and received his doctorate from Lomonosov Moscow State University in 1985. He habilitated at the Institute of Strength Physics and Materials Science of the Russian Academy of Sciences in 1994. Since 2002, he has headed the Department of System Dynamics and Friction Physics in the Institute of Mechanics at the Technische Universität (TU) Berlin. Dr.-Ing. Markus Heß studied Engineering Science at the TU Berlin. He obtained his doctorate in 2011 and received the German Tribological Society’s award for his dissertation in the same year. From 2011-2015, he headed the physics department at the preparatory college of the TU Berlin and has been a research associate and lecturer at the Department of System Dynamics and Friction Physics since 2015. Dr.-Ing. Emanuel Willert studied Engineering Science at TU Berlin and Tomsk Polytechnic University. He received his doctorate in 2020 and was awarded the Dimitris N. Chorafas Foundation Prize for his doctoral research in 2019. He has been working as a research associate at the Department of Systems Dynamics and Friction Physics since 2015.