1. Record Nr. UNINA9910383842403321

| | |
|---|---|
| Autore | Grynchenko Oleksandr |
| Titolo | Mechanical Reliability : Prediction and Management Under Extreme Load Conditions / / by Oleksandr Grynchenko, Oleksiy Alfyorov |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020 |
| ISBN | 3-030-41564-3 |
| Edizione | [1st ed. 2020.] |
| Descrizione fisica | 1 online resource (X, 125 p. 18 illus., 1 illus. in color.) |
| Disciplina | 621.81 |
| Soggetti | Quality control<br>Reliability<br>Industrial safety<br>Mechanics<br>Mechanics, Applied<br>Machinery<br>Manufactures<br>Statistics<br>Quality Control, Reliability, Safety and Risk<br>Theoretical and Applied Mechanics<br>Machinery and Machine Elements<br>Manufacturing, Machines, Tools, Processes<br>Statistics for Engineering, Physics, Computer Science, Chemistry and Earth Sciences |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Introduction -- Reliability of elements with random bearing capacity -- Management of elements reliability -- Prediction of system reliability -- Prediction and management of reliability under conditions of using safety devices -- Appendixes. |
| Sommario/riassunto | The volume describes the main theoretical propositions of the methodology to predict mechanical reliability under conditions of repeated exposure to random extreme loads. The mechanical load process is considered to be a form of a discrete sequence of loads |

occurring at times that form a random flow. The authors present solved problems of reliability prediction of elements having deterministic or random bearing capacity. A method for the probabilistic justification of safety factors is also developed in the book, providing a predetermined level of reliability of elements and systems for sudden failures during design. It considers the methods of prediction and managing reliability under conditions of using safety devices. The main theoretical results are presented in a form available for practical engineering applications. The book can be used by researchers and as a manual by teachers and graduate students of higher technical educational institutions. - Reviews the fundamentals of one of the many directions of science of reliability; - Allows prediction of an approximate value of the gamma-percentile operating time to a sudden mechanical failure corresponding to a known value of safety factors; - Facilitates readers prediction of a given reliability function of the projected object.