Travertine is a natural building stone widely preferred in our country and in many parts of the world. Travertine has a wide range of physical and mechanical properties depending on the depositional conditions. Practical and economical prediction of these properties ranging in such a wide range are preferred by practitioners. Leeb hardness measurement method, which has become widespread in recent years, is used to determine the surface hardness of the materials. In this study, it was aimed to investigate the correlations of physical and mechanical properties of travertine samples obtained from 16 different quarries in Denizli region with Leeb hardness values. For this purpose, dry and saturated density (γk, γd) apparent porosity (nA), water absorption by weight (ws), sonic velocity (Vp), wide wheel abrasion (DA), uniaxial compressive strength (TSD) values of the prepared cube samples were determined and correlated with Leeb hardness values (HL). In addition, the L type Schmidt hammer hardness values (HS) which are widely used in characterization of rock materials were obtained for all samples and compared with HL values. Investigation of the physico-mechanical properties of Denizli travertine with economic and practical Leeb hardness test has been revealed. The proposed correlation equations were obtained in linear forms and presented with their coefficients of correlation and brought into literature. Copyright © IMCET 2019 International Mining Congress and Exhibition of Turkey. All rights reserved.