

Re.: 0020-12/23/111134/Wal

Prague, 21 December 2023

### **Evaluation of the course of study by the supervisor**

Ing. Abhishek Ghimire

Doctoral thesis

**Numerical calculation of welds in structures from high-strength steel**

**Numerický výpočet svarů konstrukcí z vysokopevnostní oceli**

Ing. Ghimire studied at the Department of Steel and Timber Structures as a full-time Ph.D. student from 2020 to 2024. During his studies he completed professional and language exams. He passed the State Doctoral Examination in 2021.

During his studies he had the opportunity to participate in projects TAČR Merlion III FW01010392 Advanced design of structural details/elements using machine learning and MŠMT InterExcelence LUAUS2311 The strain limit for advanced modelling of steel structures - deterministic and probabilistic approach. He is co-author of several technical publications on contact beams in steel structures.

His Ph.D. thesis is on numerical calculation, modeling and design of welded joints in steel structures and determination of their resistance. The thesis includes experimental, analytical and numerical research on the topic. Through the proposed model and prepared numerical calculation, a higher load capacity can be achieved, which leads to a more economical design of the structure. The economic design of the structure, where the same load capacity can be achieved by using less material, has a positive effect on the amount of CO<sub>2</sub> emissions associated with industrial production. The proposed design approach has a very positive impact on the environment.

Prof. František Wald

Tutor