

- Significantly incomplete root penetration (samples 1.5 and 2.5) where the depth of the incomplete penetration is higher compared to the allowable level, influences the capacity even in the static load condition. That is caused by decreased cross sectional area and the effect of stress concentration.
- Incompletely filled groove on the one side of the weld, (samples 1.6 and 2.6), depending of the penetration, can influence the capacity in static and dynamic loading both. This influence is higher in the welds made of material S355J2G3.
- Continuous undercut of both sides of the weld (samples 1.7 and 2.7), depending of the penetration, has influence on the capacity. The influence is higher in the dynamic conditions and in the welds made of material S355J2G3
- In the situation of static loading, during the quality assessment of the welded joints (in term of imperfections that interrupt the outer contour of the weld) may be permitted certain violation of the dimension of imperfections associated to limit values prescribed in ISO 6520.
- In the situations of dynamic loading, where the level of quality B is prescribed, in all cases, there is no need for grinding the face and the root. Certain violation of the dimensions of outer contour of the weld may be tolerated.
- During the quality assessment of the welded joints the level of stress in the weld, the form of the stress and the form of the load of the structure must be considered.
- During the quality assessment of the welded joints, in the case of dynamic loading, the material of the structure must be considered. This is due to the fact that sensitivity of the stress concentration for variety of materials is different.
- Based on the results from this work, in some cases, the weld can be judged positively even if there are certain imperfections that are caused by discontinuity in the outer contour. For bringing such judgment the person must have good understanding of materials, welding, design etc.

REFERENCES

- [1] Werner Mewes; Kleine Schweibkunde fur Maschinenbauer, 2 Auflage, VDI-Verlag GmbH, Du basic material sseldorf 1992.
- [2] Георгиевски В.: Испитување и контрола на заварени врски и конструкции, Универзитет Св. Кирил и Методиј, Скопје, 1982
- [3] Г.А. Николов. Сварние конструкции, Машгиз, Москва, 1982
- [4] Zienkiewicz O.C., Taylor R.Z.: The Finite Element Method, Vol 1, Vol. 2, McGraw-Hill, London, 1991.
- [5] Leung A. Y. T.: Dynamic Analysis of Thin-Walled Structures, Journal of Thin-Walled Structures, Volume 14, Issue 3, pp.209-222, Elsevier Science Ltd.,1992.
- [6] Vinson J.R.: The Behavior of Thin Walled Structures: Beams, Plates and Shells, Kluwer Academic publishers, Dordrecht, 1989.
- [7] Neumann A. „Schweibtechnisches Handbuch fur Konstrukterre“ – Teil 1, DVS – Verlag GmbH, Dusseldorf, 1996.
- [8] Neumann A. „Schweibtechnisches Handbuch fur Konstrukterre“ – Teil 3, DVS – Verlag GmbH, Dusseldorf, 1996.
- [9] Neumann A. „Kompendium der Schweibtechnik“, Band 4: Berechnung und Gestaltung von schweib konstruktionen, DVS – Verlag, Dusseldorf, 1997.