

Points to be observed In through deck stud welding

Through deck stud welding is a stud welding process in which shear connectors are welded onto a steel structure through mostly galvanized trapezoid metal sheets- The sheet metal serves as disposable formwork for the application of site concrete, additional reinforcement in areas of tensile stress as well as a temporary working platform. To ensure satisfactory quality in through deck stud welding, all of the following requirements must be met:

1. The top flange must be free of paint in the welding area- Where beams must be protected by shop primer, the top flange must be covered with a protective tape prior to having the primer applied. Exception: In our experience, micaceous iron oxide has no detrimental effect.
2. The metal sheet must rest completely flat on the whole surface of the beam. Wherever there are any bulges, the welding pool will run into the gaps, which means that satisfactory quality can no longer be obtained. The team laying the sheets must be properly informed of the importance of tension-free setting. Welding through more than one sheet (where sheets overlap) produces welding results which are not acceptable.
3. The ceramic ferrule must be suitable for discharging the large quantities of zinc vapour generated (with enlarged degassing channels). This type of ferrule is available only for the diameter 19. Accordingly, through deck stud welding is not recommended for Ø 22.
4. The welding parameters deviate considerably from conventional settings. For Ø 19: abt. 1400 A, 1,5 sec, lift 5 - 6 mm, protrusion about 8 mm, high damping. This must be considered in the choice of equipment. The stud will be shortened by about 5 mm compared with a stud welded by conventional techniques.

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