

Material deformation in cold pressure welding

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ABSTRACT

Cold welding is a pressure welding process that does not use thermal source to achieve the weld. The joint is possible due to a very important plastic deformation (a 70% rate at least for aluminium), which creates the possibility of welding due to atomic interaction forces. This technique can be applied only to materials with a small value of yield strength, in order to have technical possibilities to ensure the force required.

A number of considerations connected to the principle of *butt cold pressure welding*, especially concerning *the process of plastic deformation* and *the forces requested by the process* are presented.

The real force requested for squeezing the parts in order to do the weld is *smaller* than that recommended by the theoretical studies (because of the *material flowing* in the clamping zone).

References

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