

THE WAYS OF CREATION OF PERMANENT TELESCOPIC TYPE JOINTS PRODUCED FROM DISSIMILAR MATERIALS

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During the development of the building units, in some cases, there is a necessity of application of permanent connections of enveloping or telescopic type. Among the most appropriate methods of such joints production are the brazing and the diffusion welding.

For the obtaining of welded telescopic joints some authors proposes to apply the pressure that arise in the contact area during heating of parts produced from heterogeneous metals due to the difference between their CTE. While CTE of internal member must be more than external one that limits the field of application of this method. However, the next authors demonstrate the ability to produce of welded telescopic joints regardless of the values of the CTE of the welded parts. The main idea of this method is the pre-assembly of welded parts with preload. The value of such preload is selected according to the required specific pressure for welding taking into account changes due to the difference in CTE depends on the temperature. Moreover, sometimes it is necessary to increase the preload on conditions that the CTE of the external member exceeds the CTE of internal one.

There are works that describe the application of cold welding for the producing of the telescopic joints of titanium-aluminium piping due to the combined deformation of specimens. To archive this, the annular grooves and ledges must be produced on the titanium part. After that the aluminium part is inserted to them by pressure. However, it is possible to join the areas of elements that quite limited along the length with the usage of this method. The analysis of the described ways of producing of enveloping joints produced from dissimilar metals indicates the absence of currently optimal and universal techniques.