

CP METALLURGICAL



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To Whom It May Concern:

9/1/08

Subject: Nelson "type" welding studs

I feel that to explain the term "Nelson Studs" it would be a good idea to talk a little about the history of stud welding. In the early 1940's a welder named Ted Nelson had to attach threaded fasteners onto ships in a naval shipyard. He did this by holding a stud flush against the base metal and welding a fillet around the base of the stud. This was a very slow process so he came up with the idea of holding the stud in an electrode holder and touching the end of the stud to the spot where it was to be welded on the base metal and quickly lifting the stud from the base plate drawing an arc and after a short welding time he pushed the stud down into the molten puddle that had formed during the arcing. This resulted in the extinguishing of the arc which in turn resulted in a contiguous weld between the base plate and the stud. Mr. Nelson realized that in order to obtain consistent results he would have to design a way to lift the stud a constant amount in order to have a constant arc length and a constant weld time. He came up with the idea of holding the stud in a chuck and using a solenoid to lift the stud away from the base plate which would create an arc and having a timer that would de-energize the solenoid after a predetermined amount of time. With the use of these modifications it was possible to achieve welding consistency. Mr. Nelson then founded the company, Nelson Stud Welding. Because Nelson Stud Welding was the first of several companies to manufacture welding studs, the term Nelson Studs became almost synonymous with the generic term, stud.

Other welding stud manufacturers came up with many innovative improvements to welding studs such as for instance the use of a solid aluminum flux ball attached to the weld base of the stud instead of the granular flux that had been originally used. This innovation was created and patented by a company called KSM Products. This was such an improvement over the granular flux that most stud manufacturers changed to the use of a solid flux as soon as the KSM patent ran out.

While the stud industry owes a lot to Mr. Ted Nelson for his contribution to the industry it by no means precludes the use of other stud manufacturers from producing weld studs. The American Welding Society (AWS) has set up standards for welding studs in their documents, AWS D1.1 Structural Welding Code, Steel and AWS D1.6 Structural Welding Code, Stainless Steel. Stud manufacturers are required to meet the requirements of the above codes which includes meeting the Manufacturers' Stud Base Qualification Requirements per Annex G of the AWS D1.1 Code. Stud Welding Products Inc. has met all of the requirements of the above codes and their studs have been accepted by all stud users throughout the country. Stud Welding Products Inc. is an excellent manufacturer of weld studs with a very strong emphasis on quality assurance and their studs are as good as or better than studs made by other stud manufacturers in the country.

Sincerely yours:

A handwritten signature in cursive script that reads "Charles O. Chase".

MS Met. Eng., Former Chair of AWS D1.1 Stud Welding Comm.