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Tucker

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[54] **SURFACE PREPARATION FOR BONDING IRON**

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[57] **ABSTRACT**

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The present invention relates to an improved etchant for iron materials and a method for etching iron materials. The etchant is an aqueous solution of ferrous chloride and phosphoric acid. The etchant preferably consisting of essentially of 20.6 gm FeCl₂·4H₂O, 88 ml H₃PO₄ (concentrated 85%) and deionized water sufficient to make a 500 ml solution total. The method of etching includes the steps of preparing the surface of the iron material to be etched by degreasing and abrading the surface and etching the surface by immersing the iron material in the ferrous chloride and phosphoric acid solution. After the surface has been completely dried, an epoxy material may be bonded thereto. The method and etchant of the present invention provide an iron surface which bonds well with an epoxy, but does not destroy any existing epoxy bond in the material as would be present in a wound iron core material bonded with an epoxy cement.

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[51] **Int. Cl.⁶** **B44C 1/22; C23F 1/00**

[52] **U.S. Cl.** **216/35; 216/52; 216/100; 252/79.2; 252/79.4**

[58] **Field of Search** **216/34, 35, 52, 216/100; 252/79.2, 79.4; 134/3, 41**

[56] **References Cited**

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10 Claims, No Drawings