

Eliminating Hydrogen Embrittlement per ASTM F1941

- Zinc
- Cadmium
- Post Bake

ASTM F1941

Electrodeposited Coatings on Threaded Fasteners

6.4 Hydrogen Embrittlement Relief:

6.4.1 *Requirement for Baking for Through Hardened Fasteners*—Unless otherwise specified by the purchaser, baking is not mandatory for fasteners with specified maximum hardness 39 HRC and below (see Note 3). Coated fasteners made from steel heat treated to a specified hardness above 39 HRC, and fasteners with captive washers made from hardened steel shall be baked to minimize the risk of hydrogen embrittlement.

6.4.2 *Baking Conditions*—Unless otherwise specified, minimum baking times shall be in accordance with Table 4.

TABLE 4 Hydrogen Embrittlement Relief Requirements^B

Specified Core Hardness (HRC)	Min Baking Time	Min – Max Baking Temperature ^{C,D}	ASTM Hydrogen Embrittlement Test Requirement ^E	Tapping Screw Hydrogen Embrittlement Test Requirement	ASTM Process Control Test Requirement ^E
Over 39 and up to 44 ^A	Min 14 h	375 to 425°F or 190 to 220°C	F606/F606M or F1624	ASME B18.6.3 or F1624	F1940 or F519
Over 44 ^A	Min 24 h	375 to 425°F or 190° to 220C	F606/F606M or F1624	ASME B18.6.3 or F1624	F1940 or F519