Behaviour of nitrided layers subjected to influence of hydrogen

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High-strength steels may exhibit severe loss of ductility, toughness and strength due to hydrogen embrittlement (HE), resulting in sudden fracture or delayed failure. The susceptibility of steels to HE increases with tensile strength. The embrittlement can be caused by either external or internal hydrogen. Hydrogen can be introduced into the metal either during fabrication (e.g. cleaning, pickling, electroplating, welding) or in service (cathodic protection reactions, corrosion reactions), and also as a result of friction and wear [1].

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