

ASTM F436 HARDENED STEEL WASHERS

STEEL

MECHANICAL PROPERTIES

THROUGH HARDENED WASHERS SHALL HAVE A HARDNESS OF 38-45 HRC, EXCEPT WHEN ZINC-COATED BY THE HOT-DIP PROCESS, IN WHICH CASE THEY SHALL HAVE A HARDNESS OF 26-45 HRC.

CARBURIZED WASHERS SHALL BE CARBURIZED TO A MINIMUM DEPTH OF 0.015" AND SHALL HAVE A SURFACE HARDNESS OF 69-73 HRA OR 79-83 HR15N, EXCEPT WHEN ZINC-COATED BY THE HOT-DIP PROCESS, IN WHICH CASE THEY SHALL HAVE A HARDNESS OF 63-73 HRA OR 73-83 HR15N.

CARBURIZED AND HARDENED WASHERS SHALL HAVE A MINIMUM CORE HARDNESS OF 30HRC OR 65 HRA.

CHEMICAL PROPERTIES

	TYPE 1	TYPE 3
ELEMENT	CARBON STEEL	WEATHERING STEEL
PHOSPHORUS, MAX,% HEAT ANALYSIS PRODUCT ANALYSIS	0.040 0.050	0.040 0.045
SULFUR, MAX,% HEAT ANALYSIS PRODUCT ANALYSIS	0.050 0.060	0.050 0.055
SILICON % HEAT ANALYSIS PRODUCT ANALYSIS		0.15-0.35 0.13-0.37
CHROMIUM % HEAT ANALYSIS PRODUCT ANALYSIS		0.45-0.65 0.42-0.68
NICKEL % HEAT ANALYSIS PRODUCT ANALYSIS		0.25-0.45 0.22-0.48
COPPER % HEAT ANALYSIS PRODUCT ANALYSIS	0.20 0.18	0.25-0.45 0.22-0.48

F436 COVERS WASHERS INTENDED FOR USE WITH GENERAL PURPOSE MECHANICAL AND STRUCTURAL BOLTS, NUTS, STUDS, AND OTHER INTERNALLY AND EXTERNALLY THREADED FASTENERS. F436 WASHERS ARE NORMALLY USED WITH A325, A354, A449, AND A490 BOLTS AND STUDS.

NOTE: PROPERTIES AND APPLICATION PARAMETERS ARE TYPICAL AND ARE PRESENTED IN GOOD FAITH BUT NO WARRANTY IS EXPRESSED OR IMPLIED.