


MATERIAL TEST REPORT

TRACEABILITY CODE:	YJ0001YJ0147AFM		
DESCRIPTION:			
ITEM	STUD BOLT	HEAVY HEX NUT	
GRADE	ASTM A193 B7	ASTM A 194 2H	
QUANTITY	42	84	
DIAMETER (IN)	5/8-11	5/8-11	
LENGTH FTFT (IN)	3 1/4	N/A	
LOT No.	3294000002	3294000026	BOX No. AFM

CHARACTERISTICS OF THE SUBSTRATE ACCORDING TO API 20E									
ITEM	STUD BOLT		HEAVY HEX NUT		ITEM	STUD BOLT		HEAVY HEX NUT	
	CHARACTERISTIC TO BE EVALUATED	STANDARD	RESULT	STANDARD		RESULT	STANDARD	RESULT	STANDARD
DIMENSIONS OF SPEC:					HEAT TREATMENT				
THREAD GO	-	OK	-	OK	HEAT No.	NJ0519824		-	
THREAD NO GO	-	OK	-	OK	QUENCHING TEMPERATURE (°C)	860	860	-	-
MECHANICAL PROPERTIES					QUENCHING TIME (MIN)	150	150	-	-
HARDNESS	MAX 35 HRC	27.4-30.5 HRC	24-35 HRC	26.8-32.1 HRC	TEMPERING TEMPERATURE (°C)	660	660	MIN 455	520
TENSILE STRENGTH (PSI)	MIN 124,814	139182-141214	-	-	TEMPERING TIME (MIN)	180	180	-	-
YIELD STRENGTH (PSI)	MIN 105,221	131926-134683	-	-	CHEMICAL COMPOSITION				
ELONGATION (%)	MIN 16	17.5-19.6	-	-	MILLHEAT No.	S21307342SX		J11308855	
REDUCTION OF AREA (%)	MIN 50	52.5-58.3	-	-	C (%)	0.370-0.490	0.38	MIN 0.400	0.43
MAGNETIC PARTICLE TESTING	100%	100% OK	-	-	Si (%)	0.150-0.350	0.25	MAX 0.400	0.14
PROOF LOAD	-	-	MIN 176 KN	176-182 KN	Mn (%)	0.650-1.100	0.81	MAX 1.000	0.68
MACRO ETCH					P (%)	MAX 0.035	0.015	MAX 0.040	0.014
SPEC OF TEST METHOD	ASTM E381-01(2006)		ASTM E381-94		S (%)	MAX 0.040	0.004	MAX 0.050	0.007
SURFACE	S2	S2	S2	S2	Cr (%)	0.750-1.200	0.99	-	-
RANDOM CONDITION	R2	R2	R2	R2	Mo (%)	0.150-0.250	0.19	-	-
CENTER SEGREGATION	C2	C2	C2	C2					

*COATING CHARACTERISTICS ACCORDING TO ASTM B994										
ACCEPTANCE TESTS				QUALIFICATION TESTS			DEPOSIT LOT:		09-15-0304-0326	
APPEARANCE	FREE OF VISIBLE COATING DEFECTS, SUCH AS BLISTERS, PITS, ROUGHNESS NODULES, BURNING, CRACKS OR UNPLATED AREAS AND OTHER DEFECT THAT WOULD AFFECT THE FUNCTION OF THE COATING.			CHEMICAL COMPOSITION		GALLING	ENVIRONMENTAL TESTING		CORROSION TESTING	
				%Ni	50.6		LOADED SPECIMENS HAVE PASSED 120 DAYS OF EVALUATION WITH TORQUE RATIO OF 1.0	CASS (ASTM B368)	120 HOURS	PART
ADHESION	THE COATING DOES NOT SHOW SEPARATION FROM THE BASE METAL, TEST METHOD ASTM B571-10			%Co	49.4	HYDROGEN EMBRITTLMENT		SALT FOG TEST (ASTM B117)	500 HOURS	***STUD
THICKNESS	20.2	µm	TEST METHOD ASTM B568				NO FAILURE AFTER 200 HOURS AT 75% UTS	MODIFIED SALT FOG TEST (ASTM G85-A2)	200 HOURS	***INTERIOR THREAD OF NUT
SAMPLING FOR THE ACCEPTANCE AND QUALIFICATION TESTS WAS MADE UNDER ASTM F1470. *THE INFO CONTAINED IN THIS DOCUMENT IS OBTAINED FROM QUALITY CONTROL TEST PERFORMED ACCORDING TO ASTM B994. **THIS TEST IS PERFORMED IN COUPONS ACCORDING TO THE REQUIREMENTS OF ASTM B994. ***THIS TEST IS PERFORMED ON OBJECTS DESCRIBED WITH THE PURPOSE OF MONITOR THE QUALITY CONTROL.						NO RED RUST AFTER THE EXPOSURE PERIOD FOR ALL ENVIRONMENTAL TESTS DESCRIBED ABOVE.				*** NUT WRENCHING FLAT
THIS CERTIFICATE IS FOR THE EXCLUSIVE USE TO WHOM IT IS ADDRESSED AND DOXSTEEL LLC NEITHER MAKES NOR ASSUMES RESPONSIBILITY FOR AND REPRESENTATION OR CERTIFICATION TO ANY OTHER PARTY. THIS REPORT APPLIES ONLY TO THE ACTUAL SAMPLES TESTED AND THE HEAT OR LOT THEY REPRESENT. TESTS CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION LISTED. THIS REPORT MAY NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF DOXSTEEL LLC. THE RESULTS REPORTED ON THIS TEST REPORT REPRESENT THE ACTUAL ATTRIBUTES OF THE MATERIAL FURNISHED AND INDICATE FULL COMPLIANCE WITH ALL APPLICABLE SPECIFICATION AND CONTRACT REQUIREMENTS.									**COUPON	0.2837
QUALITY ASSUREMENT:				ARTURO UGALDE, QUALITY CONTROL AGENT						