SWENN INC.
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TEST CERTIFICATE

NO : 38818 **DATE :** 03.11.2009

CUSTOMER : BRIGHT STAR	**SIZE** : M20-2.50X80
P.O. NO. : S5604-01-09	**SPEC** : ASTM A 490M
PRODUCT : HIGH STRENGTH HEX BOLT	**TYPE** : Type 1 – GRADE 10.9
PART NO. : SWBA10M20x80B	**THREAD :** AS PER B 1.13M 6g / ASME B 18.2.3.7 M
QUANTITY : 2100	**TEMPERING TEMPERATURE :** 530°C

CHEMICAL COMPOSITION :

		C	Si	Mn	P	S	Mo	Ni	Cr
HEAD MARK	**HEAT NO.**	**X 100**							
SWENN A490M 10S	SR30802812XX	40	24	84	2.2	1.0	19		90

MECHANICAL PROPERTIES :

TEST		REQUIREMENT	RESULT	
TENSION TEST	Tensile Strength – N/MM2	1040 – 1210	1110	1102
	Yield Strength– N/MM2	MIN 940	1060	1045
	Elongation - %	MIN 14	16	16
	Reduction of Area - %	MIN 40	58	58
PROOF LOAD – N/MM2		830	SATISFACTORY	
HARDNESS – HR		MAX C39	C34.2	C35.7

SURFACE COATING : BLACK
COATING STANDARD :
COATING THICKNESS :

DIMNL. INSPECTION : SATISFACTORY
VISUAL INSPECTION : SATISFACTORY
TEST : ASTM F 606 M

MAGNETIC PARTICLE EXAMINATION (E1444) : PASSED
SURFACE DISCONTINUITY (F788M) : PASSED
CARBURIZATION TEST (SAE J121) : PASSED
DECARBURIZATION TEST (SAE J121) : PASSED

RECOMMENDED TIGHTENING TORQUE : 505 Nm

WE CERTIFY THAT THE ABOVE PRODUCT MEETS THE SPECIFIED REQUIREMENTS OF CONTRACT.

QC MANAGER