

QUALITY CERTIFICATE

CUSTOMER: 7TMW INC **DATE:** MAR.20.2023

PRODUCT: HEX STRUCTURAL BOLT **CONTRACT NO.:** 19MPT002

CLASS: A325 **INVOICE NO.:** 19MPT0320

SIZE: 1/2-13X2 **CODE:**

MARKING: F A325 **QUANTITY:** 28000 pcs

DIMENSIONS OF SPEC:

INSPECTION ITEMS	STANDARD	RESULT
VISUAL APPEARANCE		ok
BODY DIAMETER	13.08-12.24	12.6-12.59
THREAD	GO	
	NO GO	
WIDTH ACROSS FLATS	22.22-21.59	21.75-21.9
WIDTH ACROSS CORNERS	25.65-24.61	24.8-24.9
MAJOR DIAMETER	12.66-12.39	12.55-12.58
HEAD HEIGHT	8.2-7.67	7.8-8.1
SCREW LENGTH	38.1-35.05	37.9-37.5
THREAD LENGTH	min 23.2	24-24.5

MECHANICAL PROPERTIES

CHARACTERISTICS	STANDARD	RESULT
Hardness [HR]	max 34	28-31
Wedge Strength [N/mm ²]	min 826	844-862
Yield Strength [N/mm ²]	min 635	675-681
Elongation [%]	min 14	14.3-14.7
Reduction of area [%]	min 35	38.2-41.6
Proof Load [kN]	53.6	53.6
Thickness [UM]	min 53	54-59

CHEMICAL COMPOSITION(%)

MILL HEAT	C	Si	Mn	P	S	Cr	Ni	Cu	Mo	B
332109330	0.37	0.18	0.64	0.021	0.017					

Surface coating: HDG

Dimm'l Inspn: COMPLYING WITH THE STANDARD OF A325

The information on chemical composition is based on the test certificate received from the steel mill or supplier.

Material described in this document has been inspected under the parameter set forth and found to be in conformance with the physical requirement.

We certify the above product meets specific requirement thereof.

Quality Control Supervisor Quality Control Manager