

# Bolt Technical Data

## Nominal Dimensions

SIZE AND THREAD SERIES	HEX SIZE	THREAD CLASS (AFTER PLATING)
M8 x 1.25	13mm	6h
M10 x 1.50	15mm	6h
M12 x 1.75	18mm	6h

## Mechanical Requirements and Identification Marking

PRODUCT CLASS	FULL SIZE TEST REQ. (mPa)		BASE METAL HARDNESS ROCKWELL		SURFACE HARDNESS	PROPERTY CLASS MARKING	MANUFACTURER'S IDENTIFICATION MARKING
	PROOF LOAD	TENSILE (MINIMUM)	MINIMUM	MAXIMUM			
4.6	225	400	B 67	B 95	N/A	4.6	NF
8.8	580	800	C 22	C 32	①	8.8	NF
10.9	830	1040	C 32	C 39	②	10.9	NF

- ① Surface hardness shall not be more than HV 30 above the measured base metal hardness.  
② In addition to note ①, the surface hardness will not exceed HV390 (HRC 40 equivalent).

# Proof Load and Tensile Strength Requirements

NOMINAL DIAMETER OF PRODUCT & THREAD SERIES	PROPERTY CLASS 8.8		PROPERTY CLASS 10.9	
	PROOF LOAD N	TENSILE STRENGTH N (MIN)	PROOF LOAD N	TENSILE STRENGTH N (MIN)
M8 x 1.25	21200	29200	30400	38100
M10 x 1.50	33700	46400	48100	60300
M12 x 1.75	48900	67400	70000	87700

## Torque Values

### Torque-Tension Relationships based on an empirical formula SAE J1701-M

NOMINAL DIAMETER OF PRODUCT & THREAD SERIES	PROPERTY CLASS 8.8			PROPERTY CLASS 10.9		
	CLAMP LOAD KN	TORQUE DRY (N.M.) K=0.2	TORQUE LAB (N.M.) K=0.15	CLAMP LOAD KN	TORQUE DRY (N.M.) K=0.2	TORQUE LAB (N.M.) K=0.15
M8 x 1.25	16.50	26.40	19.80	22.80	36.50	27.30
M10 x 1.50	26.10	52.20	39.20	36.10	72.20	54.20
M12 x 1.75	37.90	91.00	68.00	52.50	126.00	94.00

#### NOTES:

- The values are for information only and based on the empirical formula  $T=KDW$  where  $T$ =torque (N.M.),  $D$ =screw or bolt nominal size (mm),  $W$ = screw or bolt tension (KN) and  $K$ = torque factor.
- Individual applications should be investigated for the proper torque strategy. The content has been presented as a guideline but responsibility for its application lies with the user.

## Nuts for use with Silo Bolts

NOMINAL DIAMETER OF PRODUCT & THREAD SERIES	PROPERTY CLASS 8		PROPERTY CLASS 10	
	PROOF LOAD N	HARDNESS HRC	PROOF LOAD N	HARDNESS HRC
M8 x 1.25	31800	30 MAX	38100	26-36
M10 x 1.50	50500	-	60300	-
M12 x 1.75	74200	-	88500	-

#### NOTES:

- For the application of thin nuts it should be considered that the stripping load is lower than the proof load of a nut with full loadability.

# Sealing Washer Data

## Typical Low Density Polyethylene Washer Property Data

PROPERTY	TEST METHOD	UNITS	LOW-DENSITY POLYETHYLENE
<b>MECHANICAL</b>			
Tensile Strength	ASTM D638 DIN 53455	PSI MPA	1,350 - 2,000 10 - 14
Modulus of Elasticity	ASTM D638	PSI MPA	22,000 155
Elongation (Ultimate)	ASTM D638	%	500
Hardness - Shore	ASTM D2240	D SCALE	44 - 55
Flexural Strength	ASTM D790 DIN 53452	PSI MPA	780 5.4
Flexural Modulus	ASTM D790	PSI MPA	16,500 115
<b>THERMAL</b>			
VICAT Softening Temperature	ASTM D1525	°C	85 - 100
Brittleness Temperature	ASTM D746	°C	-75
Heat Distortion Temperature -264 psi	ASTM D648 ASTM D64	°C °C	80 -
<b>PHYSICAL</b>			
Density	ASTM D1505	G/CM <sup>3</sup>	0.91 - 0.92

## Packaging Programs **Recyclable Plastic Packaging**



### SQUARE PLASTIC PAILS

- Product is bulk packed
- Waterproof - tamper proof & resealable
- Features security strip to indicate pail has been opened



### 1/4 KEG CARTONS

- Bulk packed



### ROUND PLASTIC PAILS

- Bulk packed
- Waterproof & resealable



### PLASTIC BAG PACKAGING

Various sizes available on custom orders or private label programs.