

Thermal Diffusion Galvanizing

Extend the Application Life
of Pole Line Hardware with
ArmorGalv[®]





Thermal Diffusion Galvanizing

What it is

Thermal Diffusion Galvanizing (TDG) is a method of applying a uniform, sacrificial, zinc iron alloy coating using a metallurgical vapor diffusion process. TDG gives hardware a longer life in corrosive environments than hot-dip galvanizing (HDG).

What we offer

Hubbell partnered with the foremost supplier in the market. Using DISTEK NA's proven ArmorGalv® formulation and Hubbell manufacturing expertise, you can be confident that our TDG products will be manufactured with consistent process control and regular testing in our ISO 9001 manufacturing facilities.

Benefits

- TDG offers performance approaching stainless without the exorbitant price
- Unlike HDG, internal threads are coated to give the product total protection from corrosion
- Eco-friendly manufacturing
- ArmorGalv® coating resists damage during installation and exhibits self healing properties



Salt Fog Testing of ArmorGalv® VS. Hot Dip Galvanized



**HDG at
3000 hours**

(nut seized/locked)



**ArmorGalv at
3000 hours**

(nuts freely turn)



**HDG at
3000 hours**

(nut seized/locked)



**ArmorGalv at
3000 hours**

(nuts freely turn)

Product Comparison

Improved Performance Over HDG. | Affordable Alternative to Stainless.

	HDG	ArmorGalv	Spray Coating	Stainless Steel
ANSI Strength Requirement	+	+	+	+
Corrosion Resistance	+	+++	+++	+++
Torque Evaluation	+	+	+	+
Functionality of Threads	-	+	+	+/-
Cost	\$	\$\$	\$\$\$	\$\$\$\$

ArmorGalv® is a corrosion resistant solution with value derived from performance and cost relative to stainless steel.

Attributes

- Improved corrosion performance over HDG
- Negligible changes in material properties.
- More uniform coating thickness compared to HDG
- Hydrogen embrittlement free

Performance

- Extends life of products over HDG, approaching stainless steel
- Anti-galling properties
- Meets ASTM 1059
- Exceeds ASTM 123 and 153
- Abrasion resistant

Eco-Friendly

- ROHS, REACH, PROP65 compliant
- Acid-free surface prep
- Non-toxic coating
- Virtually zero-waste system
- Replacement for Cadmium and other toxic coatings that are used to prevent galling
- Greener supply chain

Bolts - Double Arming



Features

- Thermal diffusion galvanized corrosion protection
- Includes four assembled square nuts
- Semi-cone point

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

5/8" Thread Diameter (5/8-11UNC) | 12,400 LBS. Rated Tensile Strength

Catalog Number	Length	Approx. Ship Wt. per Each
8874TDG	24"	0.35 lbs.

3/4" Thread Diameter (3/4-10UNC) | 18,350 LBS. Rated Tensile Strength

Catalog Number	Length	Approx. Ship Wt. per Each
8874TDG	24"	2.72 lbs.
8890TDG	20"	2.92 lbs.

ANSI C135.1 Specification



Features

- Thermal diffusion galvanized corrosion protection
- Includes one assembled square nut
- Semi-cone point on 1/2", 5/8" and 3/4" diameter bolts of 8" and longer. All other bolts have chamfered ends
- Length is measured from the underside of the head to the last thread

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

3/8" Thread Diameter (3/8-16UNC) | 4,250 LBS. Rated Tensile Strength

Catalog Number	Length	Minimum Thread Length	Approx. Ship Wt. per Each
860412TDG	4 1/2"	3"	0.17 lbs.
T2060412TDG	6"	3"	0.21 lbs.

1/2" Thread Diameter (1/2-13UNC) | 7,800 lbs. Rated Tensile Strength

Catalog Number	Length	Minimum Thread Length	Approx. Ship Wt. per Each
8705TDG	5"	3"	0.35 lbs.
8706TDG	6"	3"	0.40 lbs.
8707TDG	7"	3"	0.48 lbs.
8708TDG	8"	4"	0.49 lbs.
8709TDG	9"	4"	0.57 lbs.
8710TDG	10"	4"	0.60 lbs.
8712TDG	12"	4"	0.71 lbs.
8714TDG	14"	6"	0.73 lbs.
DF2B16TDG	16"	6"	0.85 lbs.

5/8" Thread Diameter (5/8-11UNC) | 12,400 lbs. Rated Tensile Strength

Catalog Number	Length	Minimum Thread Length	Approx. Ship Wt. per Each
8802TDG	2"	1 1/2"	0.36 lbs.
PS8803TDG	3"	1 1/2"	0.48 lbs.
8804TDG	4"	3"	0.57 lbs.
8805TDG	5"	3"	0.60 lbs.
8806TDG	6"	3"	0.69 lbs.
8807TDG	7"	4"	0.75 lbs.
8808TDG	8"	4"	0.78 lbs.
8809TDG	9"	4"	0.88 lbs.
8810TDG	10"	6"	0.93 lbs.
8812TDG	12"	6"	1.08 lbs.
8814TDG	14"	6"	1.23 lbs.
8816TDG	16"	6"	1.40 lbs.
8818TDG	18"	6"	1.54 lbs.

3/4" Thread Diameter (3/4-10UNC) | 18,350 lbs. Rated Tensile Strength

Catalog Number	Length	Minimum Thread Length	Approx. Ship Wt. per Each
PS8902TDG	2"	1 3/4"	0.65 lbs.
PS8906TDG	6"	3"	1.09 lbs.
DF4B7TDG	7"	3"	1.18 lbs.
8908TDG	8"	4"	1.26 lbs.
8910TDG	10"	4"	1.54 lbs.
8912TDG	12"	6"	1.62 lbs.
8914TDG	14"	6"	1.88 lbs.
8918TDG	18"	6"	2.32 lbs.

ANSI C135.1 Specification

Bolts - Ovaley



Features

- Thermal diffusion galvanized corrosion protection
- Includes one assembled square nut
- Cone point threaded ends
- Internal eye dimensions are 9/16" x 1-1/2" x 2"

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

5/8" Thread Diameter (5/8-11unc) | 12,400 LBS. Rated Tensile Strength

Catalog Number	Length Under Eye	Thread Length	Approx. Ship Wt. per Each
29956TDG	6"	4"	1.00 lbs.
29958TDG	8"	4"	1.04 lbs.
29959TDG	9"	4"	1.13 lbs.
29960TDG	10"	6"	1.22 lbs.
29962TDG	12"	6"	1.44 lbs.
29964TDG	14"	6"	1.46 lbs.

Eyelets



Ovaley



Thimbleye

Features

- Thermal diffusion galvanized corrosion protection
- Unthreaded/slotted hole for installation under head of bolt
- Forged steel for strength and reliability

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Ovaley Eyelets

Catalog Number	Mounting Bolt Dia.	Inside Diameter Opening	Overall Length	Rated Tensile Strength	Approx. Ship Wt. per Each
B14ATDG	5/8"	1 1/4" x 3"	4 3/16"	12,400 lbs.	1.00 lbs.
B14BTDG	3/4"	1 1/4" x 3"	4 3/16"	18,350 lbs.	1.00 lbs.

Thimbleye Eyelets

Catalog Number	Mounting Bolt Dia.	Inside Diameter Opening	Overall Length	Rated Tensile Strength	Approx. Ship Wt. per Each
6519TDG	5/8"	1 5/16" x 2 9/16"	4 5/16"	12,400 lbs.	1.23 lbs.
6520TDG	3/4"	1 5/16" x 2 9/16"	4 5/16"	18,350 lbs.	1.30 lbs.



Features

- Thermal diffusion galvanized corrosion protection
- Hole tapped for bolt size as indicated

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Catalog Number	Mounting Bolt Dia.	Inside Diameter Opening	Overall Length	Rated Tensile Strength	Approx. Ship Wt. per Each
6502TDG	5/8"	1 1/2" x 1 3/4"	3"	12,400 lbs.	0.63 lbs.
6503TDG	3/4"	1 1/2" x 1 3/4"	3"	18,350 lbs.	0.54 lbs.

Guy Attachments



Guy Hook

Pole Eye Plate

Combination Pole Eye Plate and Guy Hook

Features

- Thermal diffusion galvanized corrosion protection
- Used in down or span guy applications
- Spurs/cleats resist down-slotting of thru-bolt hole
- Overturning action resisted by wide lower curved heel pad
- Combination type is compatible with either guy loop or clevis connection

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements
- Ductile iron per ASTM A-536

Guy Hook | Suffix "ILSTDG" Indicates Integral Lag Included

Catalog Number	Min. Ultimate Tensile Strength (lbs.)	Thru-Bolt Diameter	Max Guy Strand	Approx. Ship Wt. per Each
GH5TDG	12,400	5/8"	7/16"	1.39 lbs.
GH5ILSTDG	12,400	5/8"	7/16"	1.43 lbs.
GH6TDG	18,350	3/4"	1/2"	1.28 lbs.
GH6ILSTDG	18,350	3/4"	1/2"	1.52 lbs.

Pole Eye Plate

Catalog Number	Min. Ultimate Tensile Strength (lbs.)	Thru-Bolt Diameter	Max Strand/Pin Dia.	Approx. Ship Wt. per Each
GEP6TDG	21,000	3/4"	3/4"	2.83 lbs.

Combination Pole Eye Plate and Guy Hook

Catalog Number	Min. Ultimate Tensile Strength (lbs.)	Thru-Bolt Diameter	Max Strand/Pin Dia.	Approx. Ship Wt. per Each
GEP5A34TDG	21,000	3/4"	5/8"	2.25 lbs.

Hook, J-Drive



Features

- Thermal diffusion galvanized corrosion protection
- Attach wedge-type service drops and deadend clamps to crossarms, poles, or buildings.
- Fetter threads and pilot point for drivable installation

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Drive Hook

Catalog Number	Thread Dia.	Length	Overall Length	Approx. Ship Wt. per Each
C2050190TDG	7/16"	2 1/2"	4 3/4"	0.27 lbs.

Nut - Regular Square



Features

- Thermal diffusion galvanized corrosion protection
- ANSI B18.2.2, threads sized for ANSI C135.1 bolts
- Square shape provides maximum wrench contact
- Internally cut threads are zinc coated with TDG process

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Catalog Number	Accommodates Bolt Size	Threads per Inch	Width	Thickness	Approx. Ship Wt. per Each
8600MTDG	3/8"	16"	5/8"	21/64"	0.02 lbs.
55083PTDG	1/2"	13"	13/16"	7/16"	0.08 lbs.
55084PTDG	5/8"	11"	1"	35/64"	0.10 lbs.
55085PTDG	3/4"	10"	1 1/8"	21/32"	0.14 lbs.
56538PTDG	7/8"	9"	1 5/16"	49/64"	0.30 lbs.

Pins - Insulator Crossarm



Features

- Thermal diffusion galvanized corrosion protection
- Nylon threads sized for 1" pin-type insulators
- 5/8" diameter shank with 2" diameter flange base and 3/4" square wrench flats
- Furnished with one each 2" x 2" x 1/8" square washer, square nut, and MF locknut

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements
- Insulator threads are conductive nylon

Catalog Number	Shaft Height	Shank Length	Min. Shank Thread Length	ANSI Load Rating at 10 degree Deflection	Approx. Ship Wt. per Each
881PTDG	5"	5 3/4"	3"	1000 lbs.	1.48 lbs.
881APTDG	5"	6 1/2"	3"	1000 lbs.	1.56 lbs.
884PTDG	6"	5 3/4"	3"	800 lbs.	1.61 lbs.
883PTDG	6"	6 1/2"	3"	800 lbs.	1.64 lbs.

ANSI C135.17 Specification

Screws - Lag



Fetter Drive



Twist Drive

Features

- Thermal diffusion galvanized corrosion protection
- Lag screws have upset shoulders.

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Fetter Drive

Catalog Number	Diameter	Length	Approx. Ship Wt. per Each
508743TDG	3/8"	3"	0.10 lbs.
508754TDG	1/2"	4"	0.24 lbs.

Twist Drive

Catalog Number	Diameter	Length	Approx. Ship Wt. per Each
508500TDG	1/2"	4"	0.228 lbs.

Shackle - Anchor



Features

- Thermal diffusion galvanized corrosion protection
- Primarily used in attaching suspension insulators
- 20,000 lbs. tension load rating

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Catalog Number	Thickness at Bend	Length from Inside of Bend to Center of Cotter Pin Hole	Width of Opening at Cotter Pin	Cotter Pin Diameter	Approx. Ship Wt. per Each
5801TDG	1/2"	2 1/2"	3/4"	5/8"	0.93 lbs.

Stud, Line Post Insulator



Steel Crossarm Stud



Wood Crossarm Stud

Features

- Thermal diffusion galvanized corrosion protection
- Serrated collar and lockwasher secure the line post insulator on the stud

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

For Steel Crossarms

Catalog Number	Shaft Diameter / Height	Shank Diameter / Length	Thread Length on Shank	Included Hardware	Approx. Ship Wt. per Each
DF19M1TDG	3/4" x 1-1/8"	5/8" x 1-3/4"	1-3/8"	(1) hex nut and (2) single coil lockwashers	0.43 lbs.
DF19M3TDG	3/4" x 1-1/8"	3/4" x 1-3/4"	1-3/8"	(1) hex nut and (2) single coil lockwashers	0.54 lbs.

For Wood Crossarms

4" min thread length on shank

Catalog Number	Shaft Diameter / Height	Shank Diameter / Length	Thread Length on Shank	Included Hardware	Approx. Ship Wt. per Each
DF19M2TDG	3/4" x 1-1/8"	5/8" x 7"	4"	(1) square nut, (1) square washer, (1) single coil lockwasher, and (1) MF locknut	1.02 lbs.



Features

- Thermal diffusion galvanized corrosion protection
- Maintains tight fit in metal to metal connections

Material

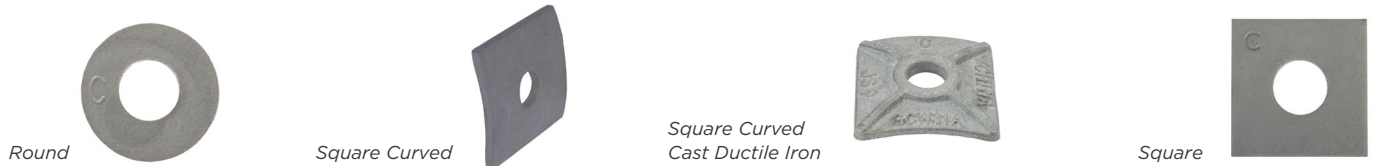
- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Lock Washers, Single Coil

Catalog Number	Stock Dimensions	Hole Size	Accommodates Bolt Size	Approx. Ship Wt. per Each
4035TDG	11/64" x 1/8"	9/16"	1/2"	0.01 lbs.
4037TDG	1/4" x 3/16"	13/16"	3/4"	0.04 lbs.

ASME B.18.21.1 specification

Washers - Round and Square



Features

- Thermal diffusion galvanized corrosion protection
- Washers protect wood components from crushing loads
- Square washers available with either a curved or flat profile

Material

- Thermal Diffusion Galvanized steel per ArmorGalv® and ASTM 1059 requirements

Round Washers

Catalog Number	Size	Hole Dia.	Accommodates Bolt Size	Approx. Ship Wt. per Each
PS6801TDG	1 O.D. x 14 Ga. (0.0747)	7/16"	3/8"	0.016 lbs.
PS6803TDG	1 3/8" O.D. x 12 Ga. (0.1046")	9/16"	1/2"	0.05 lbs.
6805TDG	1 3/4" O.D. x 10 Ga. (0.1345")	11/16"	5/8"	09 lbs.
6806TDG	2" O.D. x 9 Ga. (0.1495")	13/16"	3/4"	0.12 lbs.

ANSI B18.21.1 specification

Square Curved Washers

Catalog Number	Size	Hole Dia.	Accommodates Bolt Size	Approx. Ship Wt. per Each
PS6822TDG	2 1/2" x 2 1/2" x 3/16"	11/16"	5/8"	0.36 lbs.
682212TDG	3" x 3" x 1/4"	13/16"	3/4"	0.66 lbs.
682312TDG	3" x 3" x 1/4"	11/16"	5/8"	0.62 lbs.

Square Curved Washers - Cast Ductile Iron

Catalog Number	Size	Hole Dia.	Accommodates Bolt Size	Approx. Ship Wt. per Each
GCW31TDG	3" x 3" x 3/8"	11/16"	5/8"	0.45 lbs.
GCW31ATDG	3" x 3" x 3/8"	13/16"	3/8"	0.45 lbs.
GCW41TDG	4" x 4" x 1/2"	13/16"	3/4"	1.00 lbs.

Square Washers

Catalog Number	Size	Hole Dia.	Accommodates Bolt Size	Approx. Ship Wt. per Each
6811TDG	2" x 2" x 1/8"	9/16"	1/2"	0.13 lbs.
6812TDG	2" x 2" x 1/8"	11/16"	5/8"	0.12 lbs.
6813TDG	2 1/4" x 2 1/4" x 3/16"	11/16"	5/8"	0.24 lbs.
6814TDG	2 1/4" x 2 1/4" x 3/16"	13/16"	3/4"	0.23 lbs.
6818TDG	4" x 4" x 3/16"	13/16"	3/4"	0.87 lbs.

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