FF-N-105B – FEDERAL SPECIFICATION – NAILS, BRADS, STAPLES AND SPIKES: WIRE, CUT AND WROUGHT

Subject/Scope:

This specification covers wire and cut nails and spikes, wire, brads and staples, and wrought spikes.

Keywords:
Nail, wire, type, steel, head, point, shank, round, flat, coated, bright, diamond, staple, finish, smooth, coating, brad, diameter, size, specification, astm, box, cement, inch, length, ppp, roofing, container, package, requirement, alloy, thickness, federal, barbed, wood, test, packaging, chisel, resistant, hardened, mil, dip, leg, std, galvanized, freight, government, shipment, military, packing, standard, pallet, palletized, fed

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Text in blue boxes such as this one is instructional and is intended to assist you in understanding the document.

Text in red boxes such as this explains changes made to the document by The Wooden Crates Organization.

Red text has been added to the document or modifies the document since its final version was officially published.

Soft Conversion of Imperial to Metric

Conversions, when made, consider materials that are available in metric or imperial sizes rather than converting sizes exactly. For example: Panelboard (plywood) in the US is typically 4 feet X 8 feet (1220 x 2440 mm) while panelboard in metric countries is typically 1200 X 2400 mm. Since the standard was developed based on readily available materials these variations in material sizes could not have been practically considered.

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FF-N-105B
March 17, 1971
SUPERSEDING
Fed. Spec. FF-N-105A
July 26, 1963
(See Sec 6)

FEDERAL SPECIFICATION

NAILS, BRADS, STAPLES AND SPIKES: WIRE, CUT AND WROUGHT

This specification was approved by the Commissioner, Federal Supply Services, General Services Administration, for the use of all Federal Agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope

This specification covers wire and cut nails and spikes, wire, brads and staples, and wrought spikes.

1.2 Classification

1.2.1 Nail, brad and staple types

Nails, brads, staples and spikes shall be of the following types and styles, as specific (see 6.2).

Type I – Brads

Type II – Nails

Style	1 - Asbestos Shingle	15 - Flooring
	2 - Barrel	16 - Lath
	3 - Boat	17 - Masonry
	4 - Box	18 - Pallet
	5 - Broom	19 - Gypsum Wallboard
	6 - Casing	20 - Roofing
	7 - Coolers	21 - Shingle
	8 - Sinkers	22 - Siding
	9 - Corkers	23 - Slating
	10 - Common	24 - Rubber Heel
	11 - Concrete	25 - Underlayment
	12 - Double-Headed	26 - Square Barbed
	13 - Fine	27 - Masonry Drive
	14 - Finishing	28 - Escutcheon

Type III - Staples

Style 1 - Fence
2 - Poultry Netting
3 - Flat Top Crown
3a - Round or "V" Crown
4 - Preformed

Type IV - Cut Nails

Style 1 - Common
2 - Basket
3 - Clout
4 - Trunk
5 - Cobblers
6 - Extra-Iron Clinching
7 - Hob

Type V - Spikes

Style 1 - Common (Cut)
2 - Gutter
3 - Round
4 - Barge and Boat

1.2.2 Sizes

Nails, brads, staples and spikes shall be of the sizes listed herein or as otherwise specified (see 6.2).

2. APPLICABLE DOCUMENTS

2.1 Federal and military, standards and specifications

The following documents of the issue in effect on the date of invitation for bids or request for proposal form a part of this specification to the extent specified herein.

Federal Specifications:

NN-P-71 -Pallets; Materials-Handling, Wood General Construction

Requirements:

QQ-Z-325 -Zinc Coating Electrodeposited, Requirements for,
MMM-A-250 -Adhesive, Water-Resistant (For Closure of Fiberboard Box)
PPP-B-566 -Boxes, Folding Paperboard
PPP-B-601 -Boxes, Wood, Treated-Plywood
PPP-B-621 -Boxes, Wood, Nailed and Lock-Corner
PPP-B-636 -Box, Fiberboard

Federal Standard:

Fed. Std. No. 123 - Marking for Domestic Shipment (Civil Agencies)

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.)

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles and Seattle, WA).

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from the established distribution points in their agencies).

Military Specification:

MIL-C-81562	- Coating, Cadmium or Zinc (Mechanically Deposited)

Military Standards:

MIL-STD-109	-Quality Assurance Terms and Definitions.
MIL-STD-129	-Marking for Shipment and Storage.
MIL-STD-147	-Palletized and Containerized Unit Loads - 40" x 48" Pallets, Skids, Runners or Pallet-Type Base

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

2.2 Other publications

The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in affect on date of invitation for bids or request for proposal shall apply.

American Society for Testing and Materials (ASTM) Standards

ASTM A90	-Weight of Coating on Zinc Coated (Galvanized) Iron or Steel
ASTM A153	- Zinc Coating (Hot Dip) on Iron and Steel Hardware
ASTM A211	- Specification for Aluminum Alloy Bars and Wire
ASTM A641	- Zinc-Coated (Galvanized) Carbon Steel Wire
ASTM B487	-Measurement of Metal and Oxide Coating Thicknesses by Microscopical Examination of a Cross Section
ASTM B499	-Measurement of Coating Thicknesses by the Magnetic Method: Nonmagnetic Coating on Magnetic Basis Metals

ASTM D1761 - Testing Metal Fasteners in Wood

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA. 19103).

Uniform Classification Committee, Agent

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Tariff Publishing Officer, Room 202 Union Station, 516 W. Jackson Blvd., Chicago, IL 60606).

National Motor Freight Traffic Association, Inc., Agent

National Motor Freight Classification

(Application for copies should be addressed to the National Motor Freight Traffic Association, Inc., Agent, 1616 P Street, N.W., Washington, DC 20036)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies).

3. REQUIREMENTS

3.1 Material

Nails, brads, staples and spikes shall be of the following materials, as specified (see 6.2).

3.1.1 Steel wire

Steel wire shall be of good commercial quality, entirely suitable for the purpose and sufficiently ductile to insure that the finished product shall withstand, without fracture, cold bending through 180 degrees over a diameter not greater than the diameter of the wire. Except as specified in 3.1.2, the cold bend test will not be applied to barbed nails, or nails having mechanically formed or deformed shanks.

3.1.2 Hardened steel

Hardened steel nails shall be heated treated to a minimum hardness of Rockwell C37. The finished product shall withstand, without fracture, cold bending through 20 degrees over a diameter not greater than the diameter of the wire.

3.1.3 Medium-carbon steel sheet

Cut nails (Type IV) and cut spikes (Type V, style 1) shall be sheared from medium-carbon steel sheet of good commercial quality, entirely suitable for the purpose. The finished product shall withstand, without fracture, cold bending through 90 degrees over a diameter not greater than the thickness of the sheet.

3.1.4 Copper

Copper nails shall contain a minimum of 98 percent pure copper. Copper nails shall withstand, without fracture, cold bending through 180 degrees over a diameter not greater than the diameter or thickness of the nail.

3.1.5 Copper-clad steel wire

Copper-clad steel wire shall be not less than 20 percent copper by weight. The average thickness of the copper shall be not less than 10 percent of the radius of the finished wire; the minimum thickness shall be not less than 3 percent of the radius of the finished wire. The finished product shall withstand cold bending through 180 degrees over a diameter not greater than the diameter of the wire without fracture and without separation of the copper from the steel.

3.1.6 Aluminum alloy wire

Aluminum alloy wire shall conform to alloy 5056 having a minimum ultimate tensile strength of 60,000 PSI or alloy 6061 having a minimum ultimate tensile strength of 63,000 PSI. Smooth shank nails shall be chemically treated to remove all grease, oil and foreign matter and to microscopically roughen the surface. Barbed and mechanically deformed nails shall be cleaned to remove all grease and foreign matter. Finished, smooth shank nails shall withstand, without fracture, cold bending through 90 degrees over a diameter not greater than the diameter of the wire.

3.1.7 Wrought iron and steel

Wrought iron and steel used in the manufacture of spikes shall be of good commercial quality, entirely suitable for the purpose. The finished product shall withstand, without fracture, cold bending through 180 degrees over a diameter not greater than the square dimension of the spike being tested.

3.1.8 Brass wire

Brass wire shall be of good commercial quality, entirely suitable for the purpose. The finished product shall withstand, without fracture, cold bending through 180 degrees over a diameter not greater than the diameter of the wire.

3.2 Protective coatings and finishes

When specified (see 6.2), protective coatings and finishes shall be as follows.

3.2.1 Zinc coating

a. Hand driven staples or nails required to be zinc coated shall be cut and formed from hot dip galvanized steel wire, electrogalvanized steel wire, mechanically deposited zinc coated steel wire, or zinc flake/chromate dispersion coated steel wire or cut from uncoated (bright) steel wire and shall be hot dip galvanized, electrodeposited zinc

coated, mechanically deposited zinc coated or zinc flake/chromate dispersion coated after forming.

b. Power or mechanically driven staples required to be zinc coated shall be cut and formed from hot dip galvanized, asbestos wiped steel wire, electrogalvanized steel wire, mechanically deposited zinc coated steel wire or zinc flake/chromate dispersion coated steel wire.

c. Power or mechanically driven nails required to be zinc coated shall be cut and formed from hot dip galvanized, asbestos wiped steel wire, electrogalvanized steel wire, mechanically deposited zinc coated steel wire (bright) steel wire and shall be hot dip galvanized, electrodeposited zinc coated, mechanically deposited zinc coated or zinc flake/chromate dispersion coated after forming.

3.2.1.1 Galvanizing

a. Wire - Hot dip galvanizing after forming shall be in accordance with ASTM A641, Class 1 coating.

b. After forming. Hot dip galvanizing after forming shall be in accordance with ASTM A153. The coating weight shall be in accordance with ASTM A641, Class 1 coating.

3.2.1.2 Mechanically deposited

Mechanically deposited zinc coating shall be in accordance with MIL-C-81562, Type II. The coating weight shall be in accordance with ASTM 641, Class 1 coating.

3.2.1.3 Electrogalvanized (electrodeposited)

a. Wire - Electrogalvanized wire shall be in accordance with ASTM A641, Class 1 coating.
b. After forming - Electrodeposited zinc coating shall be in accordance with QQ-Z-325, Type I. The coating weight shall be in accordance with ASTM A641, Class 1 coating.

3.2.1.4 Zinc flake/chromate dispersion

Zinc flake/chromate dispersion immersion coating is a proprietary process identified by the registered trademark "DACROMET 320" and is covered by U. S. Patents (see 6.5). This coating consists of a dispersion of zinc flake in an aqueous solution containing chromium and proprietary organic materials. The coating shall be applied either to the steel wire before forming or to the finished item after forming. Coating thickness shall be 0.00023-0.00027 inches.

3.2.1.5

Hand driven staples and nails may be furnished with a heavier zinc coating than as specified above.

3.2.2 Cement coating

Cement coating shall be applied by tumbling, mechanical dispensing device or immersion in resin, shellac or other similar material and shall not be tacky or gummy. Cement coated nails having normal diameter of 0.135 inch (10 gage) or less shall produce a minimum increase in immediate holding power, above that of an identical bright nail before cleaning, of not less than 50 percent. Cement coatings on mechanically driven nails and staples shall be uniform and may be applied before, during or after the fasteners are cohered into strips, clips or coils. This minimum increase in holding power is not applicable to mechanically deformed nails.

3.2.3 Chemical etching

Chemical or acid etching shall remove the polish of fabrication and microscopically roughen the surface to produce a nail of increased holding power.

3.2.4 Blued nails

Blued nails shall be heated to form a thin, bluish oxide on the surface.

3.2.5 Other finished

When required, tin plating, brass plating and copper plating shall be as specified (see 6.2).

3.3 Altered shapes and power driven nails and staples

3.3.1 Mechanically formed or deformed shanks.

Mechanically formed shanks shall have barbs, flutes, angular serration, etc., formed onto the wire from which the nail is made. Mechanically deformed shanks shall have vertical or helical flutes or screw type or annular ring type deformations rolled or twisted on the shank. The deformations shall pass entirely around the body resulting in expanded ridges and depressions. (For the purpose of this specification these deformations are not to be considered as threads.) Nails with formed or deformed shanks may be fabricated from round or square wire as specified (see 6.2).

3.3.2 Mechanically driven nails

Mechanically driven nails shall be either "T" headed or with or without altered round heads. These nails shall be suitable for use in the make and model of gun specified (see 6.2). Unless otherwise specified (see 6.2), the dimensions shall correspond to the dimensions for styles 4, 7, 10, 14 or 18.

3.3.3 Power driven staples

Power driven staples shall conform to Tables IV-A, IV-B and IV-C and shall fit the make and model of staple gun specified (see 6.2).

3.4 Dimensions

Unless otherwise specified (see 6.2), dimensions shall be in accordance with the applicable table or paragraph (see 3.6).

3.4.1 Lengths

Nails and spikes with flat heads or square shoulders under the heads shall be measured from under the head or should to the tip of the point. Unless otherwise specified, all other brads, nails and spikes shall be measured overall.

3.4.2 Tolerances

3.4.2.1 Shank diameters

Tolerances on shank diameters shall be plus-or minus sign .004 inch for diameters .076 inch and larger, and plus-or-minus sign .002 inch for diameters smaller than .076 inch. Tolerances shall apply before application of protective coatings or finishes. Diameters of pointed nails shall be measured directly below the gripper marks. Diameters of mechanically deformed shanks shall be measured before deformation.

3.4.2.2 Lengths

Tolerances on lengths shall be plus-or-minus sign 1/32 inch for lengths up to and including 1 inch; plus-or-minus sign 1/16 inch for lengths over 1 inch, up to and including 2-1/2 inches; plus-or-minus sign 3/32 for lengths over 2-1/2 inches up to and including 7 inches and plus-or minus sign 1/8 inch for lengths over 7 inches.

3.4.2.3 Head diameters

3.4.2.3.1 Hand driven

Tolerances on head diameters of roofing nails shall be plus 0, minus 10 percent of the nominal head diameter (mean of two reading 90 degrees apart). For other brads, nails and spikes, the tolerances shall be plus-or-minus 10 percent of the nominal head diameter (individual measurement). The difference in diameter across the long axis of a roofing nail shall not exceed that across the short axis by more than 20 percent. For other brads, nails and spikes the difference in diameter across the long axis shall not exceed that across the short axis by more than 10 percent. A fillet shall be provided under the head; an angle or radius will be acceptable. Heads shall be well centered.

3.4.2.3.2 Mechanically driven

Tolerances on head diameters of mechanically driven nails shall comply with the manufacturer's specifications and shall be suitable for use in the make and model of gun specified (see 6.2).

3.5 Workmanship

Items covered by this specification shall be true to shape, well finished, reasonably free from imperfections, clean and free of corrosion. Mechanically driven cohered items shall be uniform and properly aligned in their assembled form.

3.6 Dimensions and other data

In the following paragraphs, the various dimensions and other data are indicated as follows:

S - Nominal size or trade designation.
L - Nominal length in inches.
H - Nominal diameter or width of head in inches.
D - Nominal wire diameter in inches.
No. /lb. - Approximate number per pound (bright finish, round shank)

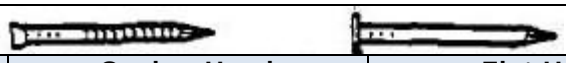
3.6.1 Type I - Brads

Steel wire, brad head, diamond point, round smooth shank, bright finish. When specified (see 6.2), brads shall have a modified brad head with blunt or chisel point for use with mechanical drivers.

L	D	No./LB	S	L	D	No./LB	S	L	D	No./LB
3/8	.035	9,520	--	1-1/4	.054	1,208	--	2-1/4	.080	320
1/2	.035	7,060	--	1-1/4	.062	940	--	2-1/4	.113	160
1/2	.048	3,990	3d	1-1/4	.080	568	--	2-1/2	.080	290
5/8	.035	5,680	--	1-1/2	.054	1,040	8d	2-1/2	.131	107
5/8	.048	3,200	--	1-1/2	.080	470	9d	2-3/4	.131	97
3/4	.035	4,800	4d	1-1/2	.099	316	10d	3	.148	70
3/4	.048	2,620	--	1-3/4	.062	672	12d	3-1/4	.148	63
3/4	.062	1,550	--	1-3/4	.080	400	16d	3-1/2	.162	50
7/8	.035	4,220	5d	1-3/4	.099	270	20d	4	.192	31
7/8	.048	2,220	--	2	.062	580	30d	4-1/2	.207	24
7/8	[3].062	1,280	--	2	.080	350	40d	5	.225	18
1	.054	1,500	6d	2	.113	181	50d	5-1/2	.244	14
1	.062	1,120	-	-	-	-	60d	6	[3].262	11
1	.072	904	-	-	-	-	-	-	-	-

3.6.2 Type II, style 1

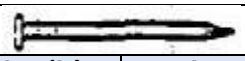
Asbestos shingle nails. Aluminum alloy wire, flat or casing head, diamond point, round smooth or mechanically deformed shank, as specified (see 6.2).



		Casing Head		Flat Head		
L	D	H	No. /Lb	H	No. /Lb	Thickness of
1-1/8	.099	.141	1,046	.312	988	1/8
1-1/4	.113	.141	787	312	785	3/16
1-1/4	.135	.156	516	.438	491	1/4

3.6.3 Type II, style 2

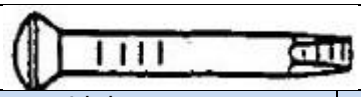
Barrel nails. Steel wire, flat head, diamond point, round smooth shank, bright or cement coated, as specified (see 6.2).



L	D	H	No. /Lb	L	D	H	No. /Lb
3/8	.067	.148	1,347	1-1/5	.076	.177	670
3/4	.067	.148	1,297	1-1/4	.080	.188	342
7/8	.076	.177	852	1-3/8	.092	.219	383
1	.076	.177	550	1-1/2	.092	.219	352

3.6.4 Type II, style 3 - Boat nails

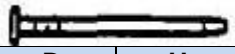
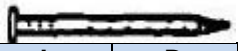
Steel wire, oval countersunk head, chisel point, round smooth shank, bright or zinc coated, as specified (see 6.2).



		Light			Heavy		
S	L	D	H	No./Lb	D	H	No./Lb
4d	1-1/2	.188	.406	82	.250	.500	47
6d	2	.188	.406	62	.250	.500	36
8d	2-1/2	.188	.406	50	.250	.500	29
10d	3	.250	.500	24	.375	.750	11
12d	3-1/4	.250	.500	22	.375	.750	10
16d	3-1/2	.250	.500	20	.375	.750	9
20d	4	.250	.500	18	.375	.750	8

3.6.5 Type II, style 4A - Box nails

Steel wire, flat head, diamond point, round, barbed or smooth shank, bright or cement coated, as specified (see 6.2). When specified (see 6.2), box nails shall have an altered or T-head with a diamond, blunt or chisel point for use with mechanical drivers.

									
S	**L**	**D**	**H**	**No./Lb**	**S**	**L**	**D**	**H**	**No./Lb**
2d	1	.067	.188	940	9d	2-3/4	.113	.297	124
3d	1-1/4	.076	.219	588	10d	3	.128	.312	90
4d	1-1/2	.080	.219	453	12d	3-1/4	.128	.312	83
5d	1-3/4	.080	.219	389	16d	3-1/2	.135	.344	69
6d	2	.099	.266	225	20d	4	.148	.375	50
7d	2-1/4	.099	.266	200	30d	4-1/2	.148	.375	45
8d	2-1/2	.113	.297	136	40d	5	.162	.406	34

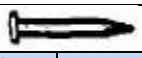
3.6.5.1 Type II, style 4B

Box nails. Steel wire, flat head, diamond point, round smooth shank, cement coated.

S	**L**	**D**	**H**	**No./Lb**	**S**	**L**	**D**	**H**	**No./Lb**
2d	1	.058	.172	1,252	7d	2-1/8	.086	.250	280
3d	1-1/8	.062	.188	978	8d	2-3/8	.099	.266	190
4d	1-3/8	.067	.203	680	9d	2-5/8	.099	.266	172
5d	1-5/8	.072	.219	510	10d	2-7/8	.113	.297	119
6d	1-7/8	.086	.250	315	-	-	-	-	-

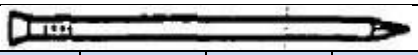
3.6.6 Type II, style 5 -Broom nails

Steel wire, flat or star head, diamond point, round smooth shank, bright finish, as specified (see 6.2).

							
L	**D**	**H**	**No./Lb**	**L**	**D**	**H**	**No./Lb**
5/8	.072	.203	1,480	3/4	.072	.203	1,175
5/8	.080	.219	992	3/4	.080	.219	845

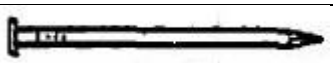
3.6.7 Type II, style 6 - Casing nails

Steel wire, flat countersunk cupped head, diamond point, round smooth shank, bright finish.

									
S	**L**	**D**	**H**	**No./Lb**	**S**	**L**	**D**	**H**	**No./Lb**
2d	1	.067	.199	1,090	8d	2-1/4	.113	.155	147
3d	1-1/4	076	.113	654	9d	2-3/4	.113	.155	133
4d	1-1/2	.080	.120	489	10d	3	.128	.170	96
5d	1-3/4	.080	.120	414	12d	3-1/4	.128	.170	88
6d	2	.099	.142	244	16d	3-1/2	.135	.177	74
7d	2-1/4	.099	244	215	-	-	-	-	-

3.6.8 Type II, style 7 - Cooler nails

Steel wire, flat head, diamond point, round smooth shank, cement coated. When specified (see 6.2), coolers shall have an altered or T-head for use with mechanical drivers.

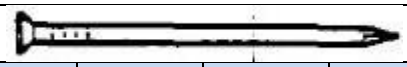


S	L*	D	H	No./Lb	S	L*	D	H	No./Lb
2d	1	.067	.172	1,110	7d	2-1/8	.099	.266	[3] 212
3d	1-1/8	.076	.188	839	8d	2-3/8	.113	.281	144
4d	1-3/8	.080	.219	493	9d	2-5/8	.113	.281	131
5d	1-5/8	.086	.234	366	10d	2-7/8	.120	.297	105
6d	1-7/8	.092	.250	278	-	-	-	-	-

* Overall length

3.6.9 Type II, style 8 - Sinker nails

Steel wire, flat countersunk head, diamond point, round smooth shank, cement coated. When specified (see 6.2), sinkers shall have an altered or T-head for use with mechanical drivers.



S	L	D	H	No./Lb	S	L	D	H	No./Lb
3d	1-1/8	.067	.172	923	12d	3-1/8	.135	.312	81
4d	1-3/8	.080	.203	527	16d	3-1/4	.148	.344	64
5d	1-5/8	.086	.219	387	20d	3-3/4	.177	.375	40
6d	1-7/8	.092	.234	293	30d	4-1/4	.192	.406	30
7d	2-1/8	.099	.250	223	40d	4-3/4	.207	.438	23
8d	2-3/8	.113	.266	153	60d	5-3/4	.244	.500	14
10d	2-7/8	.120	.281	111	-	-	-	-	-

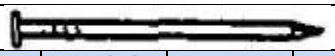
3.6.10 Type II, style 9 - Corker nails

Steel wire, flat countersunk head, diamond point, round smooth shank, cement coated. When specified (see 6.2), corkers shall have an altered or T-head for use with mechanical drivers.

S	L	D	H	No./Lb	S	L	D	H	No./Lb
2d	1	.062	.156	1,217	10d	2-7/8	.135	.312	89
3d	1-1/4	.072	.188	720	12d	3-1/8	.135	.312	81
4d	1-1/2	.086	.219	419	16d	3-3/8	.148	.344	62
5d	1-5/8	.086	.219	387	20d	3-7/8	.177	.375	38
6d	1-7/8	.099	.250	253	30d	4-3/8	.192	.406	29
7d	2-1/8	.099	.250	223	40d	4-7/8	.207	.438	22
8d	2-3/8	.120	.281	135	50d	5-3/8	.226	.469	17
9d	2-5/8	.120	.281	122	60d	5-7/8	.244	.500	13

3.6.11 Type II, style 10 - Common nails

Aluminum alloy wire, flat head, diamond point, round smooth shank or, when specified (see 6.2), square-barbed shank.



S	L	D	H	No./Lb	S	L	D	H	No./Lb
4d	1-1/2	.099	.250	825	10d	3	.162	.312	170
6d	2	.120	.266	430	16d	3-1/2	.177	.344	120
8d	2-1/2	.148	.281	220	20d	4	.199	.406	78

3.6.11.1 Type II, style 10 - Common nails

Copper wire, flat head, diamond point, round smooth shank.

L	D	H	No/Lb	L	D	H	No/Lb
5/8	.065	.156	1,380	2	.120	.266	130
3/4	.065	.156	1,160	2	.134	.281	106
3/4	.072	.172	956	2-1/2	.134	.281	86
7/8	.072	.172	808	3	.148	.312	56
1	.072	.172	704	3-1/2	.165	.344	40
1-1/4	.083	.203	424	4	.203	.406	23
1-1/2	.109	.250	208	4-1/2	.220	.438	18
1-3/4	.109	.250	180	5	.238	.469	14
1-3/4	.120	.266	144	6	.284	.531	8

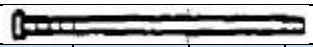
3.6.11.2 Type II, style 10 - Common nails

Steel wire, flat head, diamond point, round smooth shank, bright, zinc or cement coated, as specified (see 6.2).

S	L	D	H	No./Lb	S	L	D	H	No./Lb
2d	1	.072	.172	847	10d	3	.148	.312	66
3d	1-1/4	.080	.203	543	12d	3-1/4	.148	.312	61
4d	1-1/2	.099	.250	294	16d	3-1/2	.162	.344	47
5d	1-3/4	.099	.250	254	20d	4	.192	.406	30
6d	2	.113	.266	167	30d	4-1/2	.207	.438	23
7d	2-1/4	.113	.266	160	40d	5	.226	.469	17
8d	2-1/2	.131	.281	101	50d	5-1/2	.244	.500	14
9d	2-3/4	.131	.281	92	60d	6	.262	.531	12

3.6.11.3 Type II, style 10 - Common nails

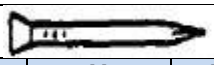
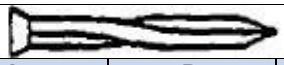
Aluminum alloy wire, bright or zinc coated steel wire, altered or T-head, diamond or chisel point, round smooth shank, as specified (see 6.2). For use with mechanical drivers.



L	D	L	D	L	D	L	D	L	D	L	D
1-1/4	.080 .086 .092 .099	1-1/2	.099 .113	1-3/4	.080 .086 .092 .099 .113	1-7/8	.080 .086 .092 .099 .113	2	.080 .086 .092 .099 .113 .148	2-1/4	.092 .099 .113
1-1/2	.080 .086 .092	1-5/8	.080 .086 .092 .099							2-1/2	.092 .099 .113 .131
										3-1/2	.131

3.6.12 Type II, style 11 - Concrete nails

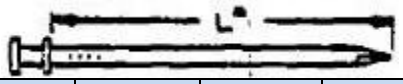
Hardened steel, flat countersunk head, diamond point, smooth or mechanically deformed shank formed from round or square stock, as specified (see 6.2), bright finish.

L	D	H	No./Lb	L	D	H	No./Lb
1/2	.148	.312	450	3/4	.181	.284	240
5/8	.148	.312	350	1	.181	.284	204
3/4	.148	.312	290	1-1/2	.181	.284	116
7/8	.148	.312	250	1-3/4	.181	.284	112
1	.148	.312	215	2	.181	.284	93
-	-	-	-	2-1/2	.181	.284	68
-	-	-	-	2-3/4	.181	.284	60
				3	.181	.284	52

3.6.13 Type II, style 12 - Double-headed nails

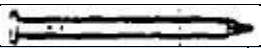
Steel wire, flat heads, diamond point, round smooth shank, bright finish.



S	L#	D	Between Heads	No./LB	S	L#	D	Between Heads	No./LB
6d	1-3/4	.113	1/4	156	16d	3	.162	3/8	45
8d	2-1/4	.131	1/4	90	20d	3-1/2	.192	3/8	28
10d	2-3/4	.148	5/16	59	30d	4	.207	7/16	22

3.6.14 Type II, style 13 - Fine nails

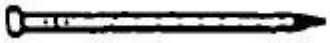
Steel wire, flat head, diamond point, round smooth shank, bright finish.



S	L#	D	H	No./LB
3d	1-1/8	.072	.172	757

3.6.15 Type II, style 14 - Finish nails

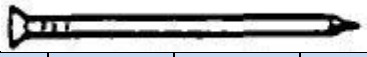
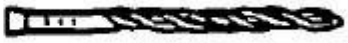
Steel wire, brad head, altered or clipped T-head for use with mechanical drivers, diamond or chisel point, smooth or barbed shank formed from round or square stock, as specified (see 6.2), bright finish.

S	L	D	H	No./Lb	S	L	D	H	No./Lb
2d	1	.058	.086	1,473	8d	2-1/2	.099	.142	190
3d	1-1/4	.067	.099	880	9d	2-3/4	.099	.142	178
4d	1-1/2	.072	.106	630	10d	3	.113	.155	124
5d	1-3/4	.072	.106	535	12d	3-1/4	.113	.155	113
6d	2	.092	.135	288	16d	3-1/2	.120	.162	93
7d	2-1/4	.092	.135	254	20d	4	.135	.177	65

3.6.16 Type II, style 15 - Flooring nails

Hardened steel or steel wire, casing head or flat cupped countersunk head, diamond or blunt point, round, smooth or mechanically deformed shank, dark (hardened), bright (steel wire) or cement coated, as specified (see 6.2).

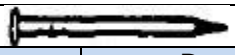



S	L	D	H	No./Lb	S	L	D	H	No./Lb
2d	1	.072	.141	840	7d	2-1/4	.113	.203	158
3d	1-1/4	.072	.141	669	*8d	2-1/2	.135	.177	105
4d	1-1/2	.080	.156	426	8d	2-1/2	.113	.203	142
4d	1-1/2	.092	.156	369	10d	3	.135	.250	82
5d	1-3/4	.092	.156	313	12d	3-1/4	.135	.250	75
6d	2	.113	.203	177	16d	3-1/2	.148	.281	58

* Smooth shank only.

3.6.17 Type II, style 16 - Lath nails

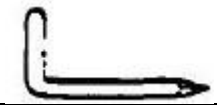
Steel wire, flat head, diamond point, round smooth shank, blued finish.



S	L#	D	H	No./LB
2d	1	.058	.141	1,280
3d (Light)	1-1/8	.062	.156	984
3d	1-1/8	.072	.172	757

3.6.17.1 Type II, style 16 - Lath nails

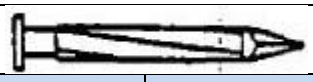
Steel wire, flat hook-head, diamond point, round smooth shank, blued or zinc coated, as specified (see 6.2).



L#	D	H (Length)	No./LB
1-1/8	.106	.438	279

3.6.18 Type II, style 17 - Masonry nails

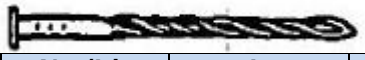
Hardened steel, flat or flat countersunk head, diamond point, mechanically deformed shank, bright finish.



STANDARD				HEAVY			
L	D	H	No./Lb	L	D	H	No./Lb
1/2	.148	.312	339	1	.250	.362	63
3/4			280	1-1/4			47
				1-1/2			43
1			173	1/-3/4			39
1-1/4			145				
1-1/2			129	2			34
1/-3/4			113	2-1/2			27
2			98	3			24
2-1/4			84	3-1/2			19
2-1/2			76				
2-3/4			70				
3			67				
3-1/4			60				
3-1/2	.162	.344	48	-	-	-	-
3-3/4	.162	.344	45	-	-	-	-
4	.177	.375	35				

3.6.19 Type II, style 18 - Pallet nails

Hardened steel or steel wire (for mechanical drivers), flat head, altered or T-head (for mechanical drivers), diamond point, round, mechanically deformed shank, bright finish (steel wire) or dark (hardened), as specified (see 6.2).



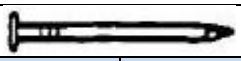
L	D	H	No./Lb	L	D	H	No./Lb
1-1/2	.120	.281	188	3-1/4	.148	.312	61
1-5/8	.120	.281	175	3-1/2	.148	.312	57
2	.120	.281	144	3-1/2	.162	.375	47
2-1/4	.120	.281	129	3-1/2	.177	.438	38
2-1/2	.120	.281	117	4	.117	.438	35
2-1/2	.135	.312	93	4	.177	.375	35
3	.120	.281	98	5	.177	.375	27
3	.135	.312	79	6	.177	.375	23
3	.148	.312	66	7**	.207	.500	15
3-1/4	.135	.312	73	8**	.207	.500	13

Note: The shank of the nails shall have helical twists extending from the point at least 2/3 of the shank length.

** Formerly Type II, style 10.

3.6.20 Type II, style 19 - Gypsum wallboard nails

Steel wire flat head, diamond point, round smooth shank, blued finish.



L	D	H	No./Lb
1-1/8	.092	.297	473
1-1/8	.092	.375	449
1-1/4	.092	.297	425
1-1/4	.106	.375	310
1-3/4	.092	.375	295

3.6.20.1 Type II, style 19 - Gypsum wallboard nails

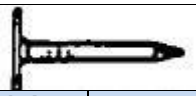
Steel wire, flat slightly countersunk head, long diamond point, round mechanically deformed shank, bright or blued finish.

L	D	H	No./Lb	L	D	H	No./Lb
1-1/8	.099	.250	380	1-1/2	.099	.250	290
1-1/4			345	1-5/8			270
1-3/8			320				

* Recommended sizes

3.6.21 Type II, style 20 - Roofing nails

Aluminum alloy wire, flat head, diamond point, round smooth shank or, when specified (see 6.2), square-barbed shank.

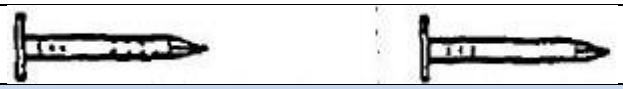


L	D	H	No./Lb	L	D	H	No./Lb
3/4	.120		936	1-1/4	.120		616
3/4	.135		746	1-1/4	.135		491
7/8	.120	.438	832	1-1/2	.120	.438	523
7/8	.135		663	1-1/2	.135		417
1	.120		759	1-3/4	.135		368
1	.135		605	2	.135		336
1*	.135	.562	580	2-1/2	.145		227

* For prepared felt roofing.

3.6.21.1 Type II, style 20 - Roofing nails

Steel wire, flat head, diamond point, round, smooth or barbed shank, bright or zinc coated, as specified (see 6.2).



		LENGTH AND NO./LB						
D	**H**	**3/4**	**7/8**	**1**	**1-1/8**	**1-1/4**	**1-1/2**	**1-1/3**
106	.281	-	-	384	-	-	-	-
106	.375	464	406	361	325	295	249	216
120	.312	-	-	-	-	240	-	-
120	.438	340	300	267	241	220	187	162
120	*.500	-	246	223	-	189	164	145
135	.469	274	241	215	194	176	150	130
142	.484	241	212	189	171	156	133	116
148	.500	222	195	174	158	144	122	106
162	.500	197	172	153	138	125	106	92

* Checkered flat head

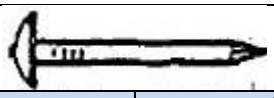
3.6.21.2 Type II, style 20 - Roofing nails

Copper-clad wire, flat head, diamond point, round smooth shank.

S	L	D	H	No./Lb	S	L	D	H	No./Lb
2d	1			280	5d	1-3/4			160
3d	1-1/4	.120	.375	320	6d	2	.120	.375	140
4d	1-1/2			190	7d	2-1/4			130

3.6.21.3 Type II, style 20 - Roofing nails

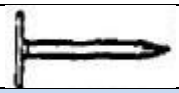
Steel wire, flat reinforced head, needle or diamond point, round smooth shank, bright or zinc coated.



L	D	H	No./Lb
1-3/4	.135	.500	105
2	.135	.500	98

3.6.21.4 Type II, style 20 - Roofing nails

Steel wire, flat reinforced head, needle or diamond point, round smooth shank, bright or zinc coated, as specified (see 6.2). (For prepared felt roofing)



		No./LB				
D	H	L=3/4	L=7/8	L=1	L=1-1/8	L=1-1/4
106	.625	195	180	170	165	160
120	.625	178	165	153	140	136

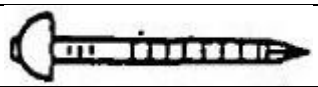
3.6.21.5 Type II, style 20 - Roofing nails

Steel wire one-inch flat integral steel cap, diamond point, round mechanically deformed shank, bright finish. (For roofing felts)

L	D	No./LB	L	D	No./LB
1/2	.106	128	1-1/4	.106	104
5/8		124	1-1/2	.106 to .120	96 to 84
3/4		115	1-3/4	.106 to .120	94 to 78
7/8		112	2	.106 to .120	90 to 74
1		110	2-1/2	.106 to .120	80 to 61
1-1/8		106	3	.106	71

3.6.21.6 Type II, style 20 - Roofing nails

Steel wire, cast lead head, diamond point, round, barbed or ringed shank, bright finish.



L	D	No./LB	L	D	No./LB
1-1/2		98	1-1/2		115
1-3/4	.148	87	1-3/4	.135	106
2		79	2		93

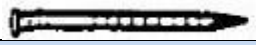
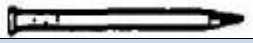
3.6.21.7 Type II, style 20 - Roofing nails

Aluminum alloy wire, flat head with neoprene washer (for aluminum roofing sheet), diamond point, round, smooth or mechanically deformed shank, as specified (see 6.2).

	SMOOTH SHANK			DEFORMED SHANK		
L	D	H	No./LB	D	H	No./LB
1-3/4	.135	.438	318	.145	438	290
2	.135		285			259
2-1/4	.135		243			235
2-1/2	.145		208			215

3.6.22 Type II, style 21 - Shingle nails

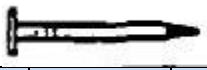
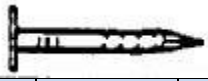
Aluminum alloy wire, flat head, diamond point, round, smooth or mechanically deformed shank, as specified (see 6.2).

SMOOTH SHANK				DEFORMED SHANK			
L	D	H	No./LB	L	D	H	No./LB
1-1/4	.101	.191	1,057	7/8	.099	.281	1,313
1-1/2	.101	.191	856	1-1/4	.080	.219	1,480
1-3/4	.105	.191	722	1-1/4	.099	.281	1,010
2	.105	.191	609	1-1/4	.113	.312	785
2-1/4	.113	.200	477	1-1/2	.113	.312	660
2-1/2	.113	.200	427	1-3/4	.113	.312	644

3.6.22.1 Type II, style 21 - Shingle nails

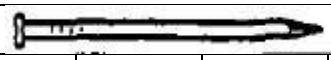
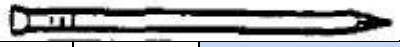
Steel wire, flat head, diamond point, round, smooth (standard) or barbed (for asbestos shingles) shank, bright or zinc coated, as specified (see 6.2).

S	L	D	H	No./Lb	L	D	H	No./Lb
3D	1-1/4	.092	.250	411	1-1/4	-	-	247
3-1/2d	1-3/8	.099	.281	312	1-1/2	113	.406	210
4d	1-1/2	.106	.281	257	1-3/4	-	-	183
-	-	-	-	-	2			162

3.6.23 Type II, style 22 - Siding nails

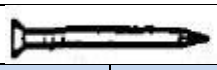
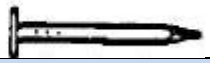
Aluminum alloy wire, flat head (insulated), casing or countersunk head (wood), as specified (see 6.2), diamond point, round smooth shank or, when specified (see 6.2), square-barbed shank.

							H		
L	D	H	No./LB	S	L	D	Casing	Csk	No./LB
1-1/2	.113	.219	701	6d	1-7/8	.106	.141	.266	604
1-1/2	.113	.312	659	7d	2-1/8	.113	.141	.266	468
2	.113	.219	495	8d	2-3/8	.128	.156	.297	319
2-1/2	.135	.219	295	10d	2-7/8	.148	.189	.312	197

3.6.24 Type II, style 23 - Slating nails

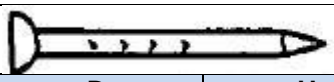
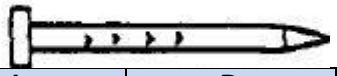
Aluminum alloy, copper or steel wire as specified (see 6.2). Aluminum and copper nails shall have a flat head (.312 to .375 dia.), diamond point and round smooth shank or, when specified (see 6.2), square-barbed shank. Steel nails shall have a flat, slightly countersunk head, diamond point, round smooth shank and bright finish.

L	ALUMINUM		COPPER		STEEL			
	D	No./LB	D	No./LB	S	D	H	No./LB
7/7	.106	1,170	-	-	-	-	-	0
1	.106	1,050	.109	292	2d	.106	.312	425
1-1/4	.106	867	.109	240	3d	.128	.375	220
1-1/4	.120	618	.120	208	-	-	-	-
1-1/4	.135	519	.135	164	-	-	-	-
1-1/2	.120	529	.109	204	4d	.128	.375	190
1-1/2	.135	435	.120	164	-	-	-	-
1-1/2	-	-	.135	132	-	-	-	-
1-1/4	-	-	.135	116	5d	.135	.406	144
2	-	-	.135	109	6d	.148	.438	104

3.6.25 Type II, style 24 - Rubber heel nails

Steel wire, flat or countersunk head, as specified (see 6.2), needle point, round smooth shank and bright finish.

L	D	H	L	D	H
5/8 3/4 7/8	.080	.154	1 1-1/8 1-1/4	.080	.154

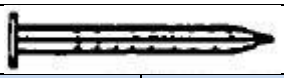
3.6.26 Type II, style 25 - Underlayment nails

Steel wire, flat or slightly countersunk head, diamond point, round, mechanically deformed shank and bright finish.

L	D	H	No./LB	S	L	D	H	No./LB
1	.080	.188	766	-	1-1/2	.099	.250	328
1-1/4	.080	.188	600	-	1-5/8	.099	.250	302
1-1/4	.099	.250	399	-	1-3/4	.099	.250	279
1-3/8	.080	.188	545	6d	1-7/8	.106	.266	175
1-3/8	.099	.250	360	7d	2-1/8	.109	.266	171
1-1/2	.080	.188	496	8d	2-3/8	.113	.297	141

3.6.27 Type II, style 26 - Square barbed nails

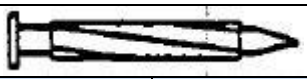
Steel wire, flat head, diamond point, square barbed shank and bright finish.



S	L	DIAGONAL	SQ. DIM	H	No./LB
6d common	2	.113	.080/.102	.250	201
8d common	2-1/2	.181	.092/.120	.266	118
10d common	3	.148	.105/.135	.281	84
16d common	3-1/2	.162	.113/.149	.312	59
20d common	4	.192	.135/.170	.375	39
6d box	2	.099	.072/.089	.250	256
8d box	2-1/2	.113	.080/.102	.266	152
6d finish	2	.092	.062/.083	.124	320
8d finish	2-1/2	.099	.092/.120	.281	191
1-1/2 truss	1-1/2	.131	.092/.120	.281	191

3.6.28 Type II, style 27 - Masonry drive nails

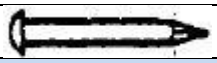
Hardened steel, flat head, cone pilot point, round, high pitch, multiple-start threaded shank, bright finish. When specified (see 6.2), masonry drive nails shall be proof load tested in accordance with 4.4.6.



S	L	Thread Dia	S	L	Thread Dia
3/32	0-3/4	.125	3/16	1-1/4	.215
1/8	0-3/4	.156	1/4	1-1/2	.268
5/32	1	.188	5/16	2	.330

3.6.29 Type II, style 28 - Escutcheon nails

Steel or brass wire, as specified (see 6.2), oval head, diamond point and round smooth shank.



D	LENGTH						
.035	1/4	1/2	-	-	-	-	-
.048	1/4	1/2	3/4	1	-	-	-
.062	1/4	1/2	3/4	1	1-1/4	-	-
.072	1/4	1/2	3/4	1	-	-	-
.080	1/4	1/2	3/4	1	1-1/4	1-1/2	2
.092	-	1/2	3/4	1	1-1/4	1-1/2	2

TABLE I STEEL WIRE GAGE SPLIT CAGE NUMBERS AND DECIMAL EQUIVALENTS

7/0-----	**.490**	**6-----**	**.192**	**18-----**	**.0475**	**30-----**	**.014**
1/4	.483	1/4	.188	1/4	.0459	1/4	.0138
1/2	.476	1/2	.185	1/2	.0448	1/2	.0136
1/4	.469	3/4	.181	3/4	.0426	3/4	.0134
6/0-----	.4615	**7-----**	.177	**19-----**	.0410	**31-----**	.0132
1/4	.454	1/4	.173	1/4	.0394	1/4	.0131
1/2	.446	1/2	.170	1/2	.0379	1/2	.0130
3/4	.438	3/4	.166	3/4	.0363	3/4	.0129
5/0-----	.4305	**8-----**	.162	**20-----**	.0348	**32-----**	
1/4	.421	1/4	.159	1/4	.0340	1/4	.0128
1/2	.412	1/2	.155	1/2	.0332	1/2	
3/4	.403	3/4	.152	3/4	.0325	3/4	.0126
							.0123
							.0121
4/0-----	.3938	**9-----**	.1483	**21-----**	.0317	**33-----**	.0118
1/4	.386	1/4	.145	1/4	.0309	1/4	.0115
1/2	.378	1/2	.142	1/2	.0301	1/2	.0111
3/4	.370	3/4	.138	3/4	.0294	3/4	.0108
3/0-----	.3625	**10-----**	.135	**22-----**	.0286	**34-----**	.0104
1/4	.355	1/4	.131	1/4	.0279	1/4	.0102
1/2	.347	1/2	.128	1/2	.0272	1/2	.0100
3/4	.339	3/4	.124	3/4	.0265	3/4	.0097
2/0-----	.331	**11-----**	.1205	**23-----**	.0258	**35-----**	.0095
1/4	.325	1/4	.117	1/4	.0251	1/4	.0094
1/2	.319	1/2	.128	1/2	.0244	1/2	.0093
3/4	.313	3/4	.109	3/4	.0237	3/4	.0091
1/0-----	.3065	**12-----**	.1055	**24-----**	.0230	**36-----**	.0090
1/4	.301	1/4	.102	1/4	.0224	1/4	.0089
1/2	.295	1/2	.099	1/2	.0217	1/2	.0087
3/4	.289	3/4	.095	3/4	.0211	3/4	.0086
1----------	.283	**13-----**	.915	**25-----**	.0204	**37-----**	.0085
1/4	.278	1/4	.089	1/4	.0198	1/4	.0084
1/2	.273	1/2	.086	1/2	.0193	1/2	.0083
3/4	.268	3/4	.083	3/4	.0187	3/4	.0081
2----------	.2625	**14-----**	.080	**26-----**	.0181	**38-----**	.0080
1/4	.258	1/4	.078	1/4	.0179	1/4	.0079
1/2	.253	1/2	.076	1/2	.0177	1/2	.0078
3/4	.246	3/4	.074	3/4	.0175	3/4	.0076
3---------	.2437	**15------**	.072	**27-----**	.0173	**39-----**	.0075
1/4	.239	1/4	.070	1/4	.0170	1/4	.00737
1/2	.235	1/2	.067	1/2	.0168	1/2	.00725
3/4	.230	3/4	.074	3/4	.0165		.00712
						3/4	
4---------	.2253	**16------**	.0625	**28-----**	.0162	**40-----**	.007
1/4	.221	1/4	.060	1/4	.0189	1/4	.0069
1/2	.216	1/2	.058	1/2	.0156	1/2	.0068
3/4	.212	3/4	.056	3/4	.0158	3/4	.0067
5---------	.207	**17------**	.054	**29-----**	.0150	**41-----**	.0066
1/4	.203	1/4	.052	1/4	.0148	1/4	.0065
1/2	.200	1/2	.051	1/2	.0145	1/2	.0064
3/4	.196	3/4	.0491	3/4	.0146	3/4	.0063

3.7 Detail requirements, type III, staples

The requirements for each style staple shall be in accordance with the following tables, as specified (see 6.2).

3.7.1 Dimensions and other data

In the following tables the various dimensions and other data are indicated as follows:

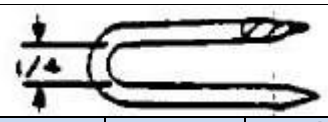
Hand driven staples

L - Inside leg length in inches
D - Wire diameter in inches
W - Inside width in inches
No. /lb. - Approximate number per pound

Mechanically driven staples

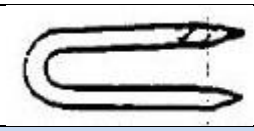
L - Outside leg length in inches +1/32, -1/64
C - Outside crown width in inches +1/32
T - Leg thickness in inches
W - Leg width in inches

TABLE II
Type III, style I - Fence staples. Steel wire,
bright finish or zinc coated, as specified (see 6.2)



L	D	No./LB	L	D	No./LB	L	D	No./LB
7/8	.1483	122	1-1/8	.1483	97	1-1/2	.1483	72
1	.1483	106	1-1/4	.1483	87	1-3/4	.1483	61

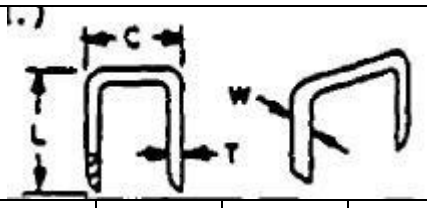
TABLE III
Type III, style 2 - Poultry netting staples. Steel wire, zinc coated



L	D	No./LB
3/4	.080	500

TABLE IV-A
Type III, style 3 - Flat Top Crown Staples.

Steel wire, aluminum alloy wire or copper-clad wire; bright finish, zinc coated, cement coated or chemically etched, as specified (see 6.2). (For use in pneumatic or mechanical guns for fastening wood, and other materials to wood.)



C Crown Width	3/16	3/8	7/16	1/2	3/4	7/8	15/16 or 1	1-3/8 or 1-17/32	2-1/8
Wire Gauge (T&W)	18	14-16-18	14-15-16	14-15-16	14-16	14-16	14-16	12	10
L Leg Length	3/8 1/2 5/8 3/4 7/8 1 1-1/8 1-1/4	3/8 1/2 5/8 3/4 7/8 - 1-1/8 1-1/4 1-3/8 1-1/2 1-5/8 1-3/4	3/8 1/2 5/8 3/4 7/8 1 1-1/8 1-1/4 1-3/8 1-1/2 1-5/8 1-3/4 1-7/8 2 2-1/4 2-1/2	- 1/2 5/8 3/4 7/8 1 1-1/8 1-1/4 1-3/8 1-1/2 1-5/8 1-3/4 1-7/8 2 2-1/4 2-1/2	- 1/2 5/8 3/4 7/8 1 1-1/8 1-1/4 1-3/8 1-1/2 1-5/8 1-3/4 1-7/8 2	- 1/2 5/8 3/4 7/8 1 1-1/8 1-1/4 1-3/8 1-1/2 1-5/8 1-3/4 1-7/8 2	- 1/2 5/8 3/4 7/8 1 1-1/8 1-1/4 1-3/8 1-1/2	- - - 3/4 -	- - - - - 1

*Tolerances for round or round flattened wire.

18 Gage (.0475)	[.0395 +/- .0020 T]	X	[.0490 +/- .0020 W]
16 Gage (.0625)	[.0560 +/- .0020 T]	X	[.0635 +/- .0020 W]
*16 Gage (.0625)	[.0460 +/- .0020 T]	X	[.0700 +/- .0020 W]
15 Gage (.0720)	[.0660 +/- .0020 T]	X	[.0740 +/- .0020 W]
14 Gage (.0800)	[.0735 +/- .0040 T]	X	[.0855 +/- .0020 W]
13 Gage(.0915)	[.0850 +/- .0040 T]	X	[.0960 +/- .0040 W]
12 Gage (.1055)	[.0935 +/- .0040 T]	X	[.1120 +/- .0040 W]
10 Gage (.1350)	[.1250 +/- .0040 T]	X	[.1400 +/- .0040 W]

* "Special" wire tolerances after forming for the attachment of composition asphalt shingles. Staples manufactured to these tolerances are for non-structural use only.

TABLE IV-B
Type III, Style 3 - Flat Top Crown

Steel wire, chisel point, tin plated, zinc or lacquer finish, as specified (see 6.2); cohered together in strips. (For use in staples tackers or machines.) Number per strip shall be as specified (see 6.2) and shall be suitable for use in make and model of gun specified (see 6.2).

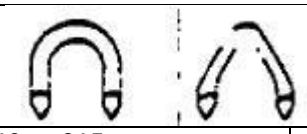
Crown Width	.435 +/.015				.180 ± .015			
Wire** Size	.020T X .030W		.020T X .40W		.020T X 030W		.020T X 040W	
Leg Length	3/16	+1/32 -1/64	1/4	+1/32 -1/64	3/8	+1/64 -0	3/8	
							1/2	
	1/4	+1/32 -1/64	5/16	+1/32 -1/64	1/2	+1/64 -0	5/8	
							3/4	
	5/16	±1/64	3/8	+1/32 -1/64	9/16	+1/64 -0	7/8	±1/64
			1/2	±1/64			1	
							1-1/8	
							1-1/4	

Crown Width	.435 ±.015				.180 ± .015			
Wire** Size	.020T X .030W		.020T X .40W		.020T X 030W		.020T X 040W	
Leg Length	3/16	+1/32 -1/64	1/4	+1/32 -1/64	3/8	+1/32 -1/64	3/8	+1/32 -1/64
							1/2	
	1/4		5/16		1/2		9/16	
							5/8	
	5/16		3/8		9/16		3/4	
							7/8	
	3/8		1/2		5/8		1	
	1/2				3/4		1-1/8	
					7/8			

* Inside dimension.
** Tolerances for thickness (T) and width (W) of wire are +.002, -.003.

TABLE IV-C
Type III, Style 3a - Round or "V" Crown

Steel wire or copper-clad wire, bright finish, zinc coated, cement coated or chemically etched, as specified (see 6.2). (For use in pneumatic or mechanical guns for fastening wood or other materials to wood.)



Crown Width	.246 + .015 .246 + .000		.435 + .015 .246 + .000	
Wire Gauge	16 (.062)		16 (.062)	
Leg Length	1 / 2 9 / 16 5 / 8 3 / 4 7 / 8 1	+/- 1/ 64	1 / 2 9 / 16 5 / 8 3 / 4 7 / 8 1	+/- 1 / 64

TABLE V
Type III, Style 4 - Preformed Staples

Steel wire, zinc or cement coated, as specified (see 6.2). Copper-clad wire, tinned or other plated finish, as specified (see 6.2). (Hand driven)

CHISEL POINT STAPLES (COMMON)

No.	L	W	D	Flatten To	Point Length	Point Angle	No./LB
5	3/8	7/32	.054	.040	3/16	13 deg	1,920
8	13/32	3/16	.067	.048	3/16	12 deg	1,376
9	7/16	7/32	.067	.048	1/4	12 deg	1,248
10	1/2	1/4	.072	.057	1/4	12 deg	864
11	9/16	9/32	.072	.057	5/16	12 deg	800
12	5/8	5/16	.072	.057	5/16	12 deg	672
14	11/16	5/16	.083	.060	11/32	12 deg	544
16	3/4	3/8	.083	.060	11/32	12 deg	410

ELECTRICAL STAPLES

(Insulated or uninsulated, as specified (see 6.2)

L	W	D	Flatten To	Point Length	Point Angle	No./LB
3/8	5/32	.067	.048	1/4	12 deg	1,440
1/2	3/16	.072	.057	1/4	12 deg	992
5/8	1/4	.072	.057	5/16	12 deg	736
3/4	3/16	.083	.060	11/32	12 deg	480
3/4	1/4	.083	.060	11/32	12 deg	450
7/8	1/4	.083	.060	11/32	12 deg	400
7/8	7/16	.083	.060	11/32	12 deg	375
1	1/2		.050T			
1-1/4	5/8	.120	X	3/8	18 deg	--
			.215W			

HOOP STAPLES

(Inside dimensions)

1/2 Inch Wide

L	D	Flatten to	No./LB	L	D	Flatten to	No./LB
1/2	.072	.057	720	5/8	.083	.060	432
1/2	.083	.060	467	3/4	.072	.057	494
5/8	.072	.057	576	3/4	.083	.060	375

5/8 Inch Wide

L	D	Flatten to	No./LB	L	D	Flatten to	No./LB
1/2	.072	.057	628	5/8	.083	.060	400
1/2	.083	.060	471	3/4	.072	.057	460
5/8	.072	.057	532	3/4	.083	.060	340

3/4 Inch Wide

L	D	Flatten to	No./LB	L	D	Flatten to	No./LB
1/2	.072	.057	576	3/4	.072	.057	432
1/2	.083	.060	432	3/4	.083	.060	324
1/2	.109	.083	256	3/4	.109	.083	192
5/8	.072	.057	493	1	.072	.057	346
5/8	.083	.060	370	1	.083	.060	259
5/8	.109	.083	219	1	.109	.083	154

7/8 Inch Wide

L	D	Flatten to	No./LB	L	D	Flatten to	No./LB
1/2	.072	.057	531	3/4	.072	.057	406
1/2	.083	.060	400	3/4	.083	.060	305
5/8	.072	.057	461	7/8	.072	.057	364
5/8	.083	.060	345	7/8	.083	.060	273

5/8 Inch Wide

L	D	Flatten to	No./LB	L	D	Flatten to	No./LB
5/8	.083	.060	324	7/8	.083	.060	259
5/8	.109	.083	198	7/8	.109	.083	158
3/4	.083	.060	288	1	.083	.060	236
3/4	.109	.083	176	1	.109	.083	143

1-1/4 Inch Wide

L	D	Flatten to	No./LB	L	D	Flatten to	No./LB
3/4	.083	.060	216	1	.083	.060	179
3/4	.109	.083	130	1	.109	.083	120

3.8 Detail requirements, type IV, cut nails

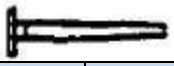
Unless otherwise specified, cut nails shall be sheared from medium carbon sheet steel and shall have a wedge-shaped shank with a sheared-square point and narrower than the up-set head end. Other requirements shall be in accordance with the following tables, as specified (see 6.2).

3.8.1 Dimensions and other data

In the following tables the various dimensions and other data are indicated as follows:

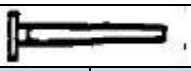
S - Commercial size designation
L - Length in inches
T - Thickness in inches
H - Head diameter in inches
No. /lb - Approximate number per pound.

TABLE VI
Type IV, Style 1, Common Cut Nails Steel or copper, flat head,
bright finish or zinc coated, as specified (see 6.2).



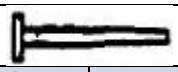
S	L	S	L	S	L	S	L	S	L
2d	1	5d	1-3/4	9d	2-3/4	16d	3-1/2	40d	5
3d	1-1/4	6d	2	10d	3	20d	4	50d	5-1/2
3-1/2d	1-3/8	7d	2-1/4	12d	3-1/4	30d	4-1/2	60d	6
4d	1-1/2	8d	2-1/2	-	-	-	-	-	-

TABLE VII
Type IV, Style 2 - Basket Cut Nails
Steel, flat head, bright finish



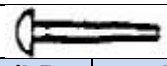
L	T	H	No./LB	L	T	H	No./LB
5/8	.049	.180	2,080	7/8	.058	.203	1,056
3/4	.049	.180	1,504	1	.058	.220	928

TABLE VIII
Type IV, Style 3 - Closet Cut Nails
Steel, flat head, bright finish,
blued or zinc coated, as specified (see 6.2).



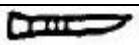
L	T	H	No./LB	L	T	H	No./LB
3/4	.065	.220	960	1	.072	.259	576
7/8	.0685	.238	768	1-1/4	.0775	.284	384

TABLE IX
Type IV, Style 4 - Trunk Cut Nails
Steel, oval head, bright finish, blued, brass or copper plated, as specified (see 6.2).



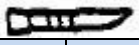
L	T	H	No./LB	L	T	H	No./LB
3/4	.072	.2485	672	1	.083	.2715	448
7/8	.072	.2485	608	1-1/4	.083	.2715	352

TABLE X
Type IV. Style 5 - Cobblers Cut Nails Steel, casing head, clinch point, bright finish or brass plated, as specified (see 6.2).



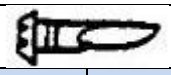
L	T	H	No/LB
1/2	.065	.109	1,952
5/8	.065	.109	1,504
¾	.065	.109	1,344

TABLE XI
Type IV, Style 6 - Extra-Iron Clinching Cut Nails Steel, casing head, clinch point, bright finish or blued, as specified (see 6.2).



L	T	H	No./LB	L	T	H	No./LB
3/8			4,128	11/16	.049	.93	2,000
7/16			3,488	3 / 4	.0535	.101	1,640
1/2	.049	.093	3,040	13/16	.0535	.101	1,600
9/16			2,864	7/8	.0535	.101	1,520
5/8			2,256				

TABLE XII
Type IV, Style 7 - Hob Cut Nails Steel, square grooved head, clinch point, bright finish or blued, as specified (see 6.2).



L	T	H	No/LB
7/16	.134	.380	268
1/2	.134	.380	264

3.9 Detail requirements, type V, spikes

The requirements for each style spike shall be in accordance with the following tables, as specified (see 6.2).

3.9.1 Dimensions and other data

In the following tables the various dimensions and other data are indicated as follows:

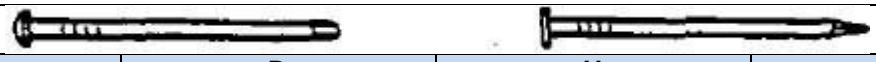
S - Commercial size designation
L - Length in inches
H - Head diameter in inches
D - Wire diameter in inches

TABLE XIII
Type V, Style 1 - Common Cut Spikes

These spikes shall be sheared from medium carbon sheet steel and shall have a wedge-shaped shank with a square point end narrower than the upset head end. They shall have a flat head, bright finish or zinc coated, as specified (see 6.2).

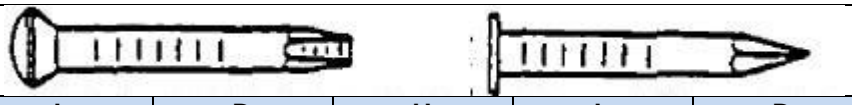
S	L	S	L	S	L
20d	4	50d	5-1/2	80d	7
30d	4-1/2	60d	6	100d	8
40d	5	-	-	-	-

TABLE XIV
Type V, Style 2 - Gutter Spikes
Steel wires, oval head, chisel point, flat head, diamond point;
bright finish or zinc coated, as specified (see 6.2).



L	D +/- .004	H Flat	H Oval
6-1/2, 7, 8, 8-1/2 9, 10, 10-1/2	.250	.562	.531

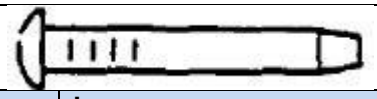
TABLE XV
Type V, Style 3 - Round Spikes
Steel wire, oval countersunk head, chisel point; flat head,
diamond point; bright finish or zinc coated, as specified (see 6.2).



S	L	D +/- .004	H	L	D +/- .004	N
40d	5	.2625	.531	8	.312	.625
50d	5-1/2	.283	.562	8	.375	.750
60d	6	.283	.562	9	.375	.750
-	7	.312	.625	10	.375	.750

TABLE XVI
Type V, Style 4 - Barge and Boat Spikes

Wrought iron, hot rolled steel rod or steel wire; square, diamond or oval head; chisel point; bright finish or zinc coated; as specified (see 6.2).



D-SQUARE	H	L
1/4	17/32	3, 3-1/2, 4, 5, 6, 7, 8
5/16	19/32	3-1/2, 4, 5, 6, 7, 8
3/8	11/16	3, 3-1/2, 4, 5, 6, 7, 8, 9, 10, 11, 12
7/16	13/16	6, 7, 8, 9, 10, 11, 12
1/2	1	6, 7, 8, 9, 10, 11, 12
5/8	1-1/8	8, 9, 10, 11, 12

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection

Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Quality assurance terms and definitions

Quality assurance terms and definitions used herein are in accordance with MIL-STD-109.

4.2 Inspection provisions

4.2.1 Lot

A lot shall consist of all brads, nails staples or spikes of the same type, style, size, material, finish, head style, shank style and point produced under essentially like conditions and offered for acceptance at any one time.

4.2.2 Sampling

4.2.2.1 Sampling for examination

A random sample of items shall be selected from each lot in accordance with TABLE XVII for examination. The acceptance manner shall be as specified in the table.

TABLE XVII
Sampling for Examination

Lot Size – Number of kegs, pkgs, or containers in lot	Sample size - Number of kegs, pkgs, or containers in sample	Sample size – number of items	Acceptance number of defectives
2 to 15	2	14	1
16 to 40	3	24	3
41 to 110	5	35	5
111 to 300	7	49	6
301 to 500	10	70	9
501 to 1300	15	120	12
1301 to 3200	25	150	17
3201 to 8000	35	215	24
8001 and over	50	300	32

4.2.2.2 Sampling for test of ductility, zinc coating, cement coating and proof load

A random sample of items shall be selected from each lot in accordance with Table XVIII for testing. The acceptance number shall be as specified in the table.

TABLE XVIII
Sampling for Tests

Lot Size – Number of kegs, pkgs, or containers in lot	Sample size - Number of kegs, pkgs, or containers in sample	Sample size – number of items for each test	Acceptance number of defectives for each test
2 to 15	2	4	0
16 to 40	3	6	0
41 to 110	5	10	0
111 to 300	7	14	1
301 to 500	10	20	1
501 to 1300	15	30	2
1301 to 3200	25	50	3
3201 to 8000	35	70	5
8001 and over	50	100	6

4.2.2.3 Sampling for test of copper-clad wire

If the contract or order includes copper-clad items, the supplier shall furnish with the items five wire specimens, each not less than 12 inches long, certified to be representative of the wire used in the production of the items.

4.2.2.4 Sampling for test of aluminum wire

If the contract or order includes aluminum nails, the supplier shall furnish with the nails five wire specimens, each not less than 12 inches long, certified to be representative of the wire used in the production of the nails.

4.2.3 Material certification

When specified in the contract or order (see 6.2), the contractor shall furnish a certificate of the chemical composition of the aluminum alloy and copper used in the contract or order. Material thus certified shall be representative of the material used in the production of the items included in the contract or order.

4.3 Examination

Each item taken as specified in 4.2.2.1 shall be examined to determine conformance to this specification. Examination shall be conducted in accordance with Table XIX. Any item in the sample containing one or more defects shall be rejected, and if the number of defective items exceeds the acceptance number for that sample, the lot represented by the sample shall be rejected.

TABLE XIX

Categories	Defects	Inspection Method
Critical	None defined	
Major		
101	Type, style and size not as specified (1.2.1)	Visual
102	Material and finish not as specified (3.1 and Visual 3.2)	Visual
103	Length not as specified (3.4) SIE*	SIE
104	Wire diameter (gauge) not as specified (Table I)	SIE
Minor		
201	Other dimensions not as specified (3.4)	SIE
202	Workmanship (3.5)	Visual
203	Protective coating or finish missing or incomplete. Evidence of fins or lumps (3.2)	Visual

* SIE - Standard Inspection Equipment

4.4 Tests

4.4.1 Ductility

Samples selected in accordance with 4.2.2.2 shall be subjected to a ductility (bending) test to determine conformance to 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 3.1.7, or 3.1.8, as applicable. Items shall be bent by any suitable means available.

4.4.2 Zinc-coating (weight)

Samples selected in accordance with 4.2.2.2 shall be tested for weight of the zinc coating to determine conformance to 3.2.1.1, 3.2.1.2 and 3.2.1.3. The heads and points shall be cut from the samples and the weight of the zinc coating on the remaining lengths shall be determined in accordance with ASTM A90.

4.4.2.1 Zinc coating (thickness)

Samples selected in accordance with 4.2.2.2 shall be tested for coating thickness to determine conformance to 3.2.1.4. The tests shall be conducted in accordance with ASTM B487 or ASTM B499. For reference purposes, ASTM B487 shall be used

4.4.3 Cement coating (holding power)

Samples selected in accordance with 4.2.2.2 shall be tested for holding power of cement coating in accordance with ASTM D1761 (Nail Withdrawal Test), except as modified herein. The nails shall be driven, perpendicular to the grain, into sound, dry western yellow pine, hemlock, fir or larch. Evidence of less than a 50 percent average increase in holding power, above that of an identical bright nail before cleaning, shall be cause for failure of the test. nails shall be tested within 24 hours after driving.

4.4.4 Copper-cladding

Samples selected in accordance with 4.2.2.3 shall be subject to tests of the thickness and weight of the copper-cladding to determine conformance to 3.1.5. The tests shall be as follows:

4.4.4.1 Thickness

Measurements of thickness of copper-cladding shall be made either by (a) accurately measuring the diameter of the wire before and after removing the cladding by any suitable means, (b) cutting off the wire, grinding smooth and etching the exposed cross section to differentiate between core and cladding, and measuring under suitable magnification or (c) using electrical indicating instruments of suitable accuracy.

4.4.4.2 Weight

The percentage of copper shall be determined by chemical analysis of a representative sample of the wire or by chemically stripping the copper and accurately weighing the sample of wire before and after stripping.

4.4.5 Aluminum (tensile strength)

Samples of aluminum wire selected in accordance with 4.2.2.4 shall be subjected to a tensile strength test in accordance with ASTM 3211 to determine conformance to 3.1.6.

4.4.6 Proof load (Type II, style 27- masonry drive nails)

When specified (see 6.2), samples selected in accordance with 4.2.2.2 shall be subjected to a proof load test. Proof loads shall be specified below. The samples being tested shall not be removable when driven into concrete of 3,000 p.s.i. compressive strength and subjected to the specified proof loads in an axial direction. The concrete shall show no evidence of failure attributable to the masonry nail itself.

* Size (Inch)	Proof Loads (lbs)
5/32	240
3/16	400
1/4	1,200
5/16	1,300

Note: Recommended safe working load is one-fourth the proof load
* Larger sizes shall have proof loads as specified (see 6.2).

4.5 Inspection of preparation for delivery

Preservation, packaging, packing and marking shall be examined to determine conformance to Section 5 of this specification.

5. PREPARATION FOR DELIVERY

5.1 Packaging

Packaging shall be level A, B, or C, as specified (see 6.2)

5.1.1 Level A

5.1.1.1 Unit packaging

5.1.1.1.1 Staples

Unless otherwise specified (see 6.2), staples of like sizes and description shall be packaged in quantities of 25 or 50 pounds, as specified (see 6.2). The containers shall conform to PPP-B-636, class weather resistant, V3c or V3s, style RSC, with liner and top and bottom pads. The liner shall be secured to the sides of the container with water resistant adhesive conforming to MMM-A-250, Type I or II as applicable. Closure shall be in accordance with the box specification. Optional containers shall conform to PPP-B636, class weather resistant, V3c or V3s, style FTC and closed in accordance with the box specification.

5.1.1.1.2 Nails

Unless otherwise specified (see 6.2), nails of like size and description shall be packaged in quantities of 5 or 50 pounds, as specified (see 6.2). The 5 pound containers shall conform to PPP-B-636, class domestic, variety SW, grade 200, style optional and closed in accordance with the box specification. The 50 pound containers shall conform to PPP-B-636, class weather resistant, V3c or V3s, style RSC with liner and top and bottom pads. The liner shall be secured to the sides of the container with water resistant adhesive conforming to MMM-A-250, type I or II as applicable. Closure shall be in accordance with the box specification. Optional containers shall conform to PPP-B-636, class weather resistant, V3c or V3s, style FTC and closed in accordance with box specification.

5.1.1.1.3 Brads

Brads of like size and description shall be packaged in quantities of 1/4 pound or 1 pound, as specified (see 6.2). Containers shall conform to PPP-B-636, variety 1, style I or II, type and class optional and closed in accordance with the box specification.

5.1.1.1.4 Spikes

Spikes of like size and description shall be package in quantities of 50 pounds. Containers shall be as specified in 5.1.1.1.2.

5.1.1.1.5 Cohered staples, nails and brads

Cohered staples, nails and brads as used in pneumatic or mechanical guns shall be packaged as specified in (see 6.2).

5.1.1.2 Intermediate packaging

5.1.1.2.1 Five pound packages

Five pound packages of nails of like size and description shall be intermediate packaged in quantities of 10 pound packages each. Containers shall conform to PPP-B-636, class weather resistant, V3c or V3s, style RSC and closed in accordance with the box specification.

5.1.1.2.2 Brads

Brads of like size and description shall be intermediate packaged in quantities of 100 each or 40 each of the 1/4 pound packages or 25 each or 10 each of the 1 pound packages, as specified (see 6.2). Containers shall conform to PPP-B-636, class weather resistant, W5c, style optional and closed in accordance with the box specification.

5.1.2 Level B

5.1.2.1 Unit packaging

5.1.2.1.1 Staples, nails and spikes

Staples, nails and spikes shall be packaged in accordance with 5.1.1.1.1, 5.1.1.1.2, or 5.1.1.1.4, respectively, except that the boxes and liners shall conform to PPP-B-636, class domestic, Grade 275.

5.1.2.1.2 Brads

Brads shall be packaged as specified in 5.1.1.1.3.

5.1.2.1.3 Cohered staples, nails and brads

Cohered staples, nails and brads as used in pneumatic or mechanical guns shall be packaged as specified in (see 6.2).

5.1.2.2 Intermediate packaging

5.1.2.2.1 Five pound packages

Five pound packages of nails of like size and description shall be intermediate packaged in accordance with 5.1.1.2.1, except that the boxes shall conform to PPP-B-636, class domestic, Grade 275.

5.1.2.2.2 Brads

Brads of like size and description shall be intermediate packaged as specified in 5.1.1.2.2, except that the boxes shall conform to PPP-B-636, class domestic, Grade 275.

5.1.3 Level C (bulk)

Bulk nails, brads, stapes and spikes of like size and description shall be packaged in the quantities specified in 5.1.1. Packaging shall afford adequate protection against damage during direct shipment from supply source to first receiving activity. The supplier's standard practice may be used provided it fulfills the above requirements.

5.1.3.1 Level C (cohered)

Cohered nails, brads and staples as used in pneumatic or mechanical guns shall be packaged in quantities according to the manufacturer's specifications (unless otherwise specified). Packaging shall afford adequate protection against damage during direct shipment from supply source to first receiving activity.

5.2 Packing

Packing shall be level A, B, or C, as specified (see 6.2).

5.2.1 Level A

Nails, brads, staples and spikes of like sizes and description, packaged as specified in 5.1, shall be packed in close-fitting wood treated plywood boxes conforming to PPP-B601, overseas type, style A, B, I or J, or in wood boxes conforming to PPP-B-621, class 2, style optional, type 2 load, as specified (see 6.2), up to the weight limitation of the container. Closure shall be in accordance with the appendix to the box specification. Strapping shall be zinc coated.

5.2.2 Level B

When specified (see 6.2), nails, brads, staples and spikes of like size and description, packaged as specified in 5.1, shall be palletized. The pallets shall conform to NN-P-71, type

optional, size 2 and unitized in accordance with MIL-STD-147, load type I, except the horizontal top course strap shall not be required. For cohered nails and staples, pallets conforming to size 1 (32 inches x 40 inches) of NN-P-71, may be used.

5.2.3 Level C

Nails, brads, staples and spikes of like size and description, packaged as specified in 5.1, shall be packed or palletized to afford adequate protection against damage during direct shipment from supply source to first receiving activity. Containers and packing shall comply with Uniform Freight Classification or National Motor Freight Classification.

5.3 Marking

5.3.1 Civil agencies

Interior packages and shipping containers shall be marked in accordance with FED. STD. NO. 123.

5.3.2 Military agencies

Interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use

6.1.1 Nails, brads and staples

Nails, brads, and staples are intended for use in fastening wood and wood products. However, special types of nails and staples are specifically intended for certain purposes; i.e. masonry fasteners, fastening roofing, electrical wiring and fences.

6.1.2 Cut and round spikes

Cut and round spikes are for general use in medium to heavy construction.

6.1.3 Gutter spikes

Gutter spikes are for use in installing roof gutters and saves troughs.

6.1.4 Barge and boat spikes

Barge and boat spikes are for use in general marine construction.

6.2 Ordering data

Purchasers should select the preferred options permitted herein, and include the following information in procurement documents:

(a) Title, number and date of this specification.
(b) Type and style required (see 1.2.1).
(c) Material (see 3.1).
(d) Protective coating or finish, if require and type of zinc coating, when required (see 3.2 and 3.2.1).
(e) Shape wire for formed or deformed shanks, when required (see 3.3.1).
(f) Make and model gun to be used for power driven nails or staples (see 3.3.2 or 3.3.3).
(g) Type and diameter of head and shank, type of point, width of staple, when required, and thickness of cut nails, when required (see 3.4, 3.6, 3.7 and 3.8).
(h) Length required (see 3.4, 3.6, 3.7 and 3.8).
(i) Whether insulated or uninsulated electrical staples are required (see Table V).
(j) Material certification, when required (see 4.2.3).
(k) When proof load test of masonry nails is required (see 4.4.6).
(l) Proof loads of masonry nails, when required (see 4.4.6).
(m) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
(n) Weight per unit package, when required (see 5.1.1).
(o) Quantity per intermediate package, when required (see 5.1.1.2.2).
(p) Packaging requirements for cohered nails, brads and staples (see 5.1.1.1.5 and 5.1.2.1).
(q) When palletization is required (see 5.2.2).

6.3 Supersession data

This specification includes the requirements of FF-S-606, dated August 29, 1956; FF-N-103C in part, dated July 24, 1964; and FF-S-325 in part, dated September 10, 1957.

6.4 Cross reference data

Cross reference between types, styles and groups of FF-S-606, FF-N-103C and FF-S-325 and the types and styles of this specification are as follows:

FF-S-606	FF-N-105B
Common cut spikes	Type V, Style 1
Common Cut nails	Type IV, Style 1
Wire gutter spikes	Type V, Style 2
Round wire spikes	Type V, Style 3
Wrought Barge and boat spikes	Type V, Style 4

FF-N-103C	FF-N-105B
Type I, Style 1	Type IV, Style 2
Type I, Style 2	Type IV, Style 3
Type I, Style 3	Type IV, Style 4
Type II, Style 5	Type III, Style 4
Type III, Style 1	Type IV, Style 5
Type III, Style 2	Type IV, Style 6
Type III, Style 3	Type IV, Style 7

FF-S-325	FF-N-105B
Group VII	Type II, Style 17

6.5 Dacromet trademark

DACROMET 320' is a registered trademark of the Diamond Shamrock Corporation, Metal Coatings Division, PO Box 127, Chardon, OH 44024. Information regarding this coating process may be obtained from them.

Military Custodians:

Army – WC
Navy – YD
Air Force – 82

Reviewer Activities:
Army – GL
Navy – SA
Air Force – None
DSA – IS, GS
NSA

User activities:

Army – AV, CE, ME, MI
Navy – AS, MC, SH
Air Force – None

Preparing activity:
Army – WC

Civil Agencies Interest:

GSA
DC
JUS
Agr

Instructions and form for submitting changes has been removed.